UNITED STATES DEPARTMENT OF COMMERCE
OFFICE OF TECHNICAL SERVICES
WASHINGTON 25, D. C.

TECHNICAL TRANSLATIONS

Volume 2 Number 3 Pages 169-214 August 7, 1959

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Designed to serve the English-speaking user, this index lists post World War II publications received by the Library of Congress and over 100 major American research libraries from Albania, Bulgaria, Czechoslovakia, Estonia, Hungary, Latvia, Lithuania, Poland, Rumania, and Yugoslavia in all fields of knowledge. Arrangement in the first part is by country and within each country by 17 subject classes. In addition to the entry in the original language, a translation of the title or a descriptive annotation in English is given for each monograph and periodical, with the tables of contents translated into English for selected periodicals. The second part, comprising approximately two-thirds of the Index, consists of a subject index to all articles appearing in periodicals for which the tables of contents are translated and to all monographs listed.

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1955-1958, Vols. 1-4, $5.00/volume

AGRICULTURE

Animal Husbandry

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR)
1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Section Q. Farm Animals.
No. 11, Abstracts 49924-50132, JPRS: 1566-N, 59-13500
No. 12, Abstracts 54673-54895, JPRS: 1348-N, 59-13291
No. 14, Abstracts 64385-64593, JPRS: 1532-N, 59-13477
No. 17, Abstracts 78666-78877, JPRS: 1572-N, 59-13506

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR)
1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Section R. Diseases of Farm Animals.
No. 2, Abstracts 7282-7370, JPRS: 1151-N, 59-13057
No. 7, Abstracts 31064-31149, JPRS: 1530-N, 59-13475

No. 10, Abstracts 45356-45457, JPRS: 1417-N, 59-13373
No. 11, Abstracts 50139-50240, JPRS: 1590-N, 59-13526
No. 14, Abstracts 64606-64700, JPRS: 1536-N, 59-13481
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No. 17, Abstracts 78879-78960, JPRS: 1472-N, 59-13419
No. 18, Abstracts 83503-83583, JPRS: 1617-N, 59-13549
Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Lenkeit, W.
THE TIME PASSAGE OF FEED AND THE QUANTITATIVE COURSE OF ELIMINATION THROUGH THE ALIMENTARY CANAL OF RUMINANTS ACCORDING TO EXPERIMENTS WITH SHEEP (Die Durchgangszeiten des Futters und der Quantitative Verlauf der Ausscheidung durch den Verdauungskanal der Wiederkäuer, nach Versuchen an Schafen). [1959] [14]p. (2 figs. omitted) 12 refs.
Order from SLA mi$2.40, ph$3.30 59-15274

Trans. of Tierernährung u[nd] Tierzucht (Germany) 1930, v. 3, p. 631-138.

Mata, Enrique Garcia and Cano, Alberto E.
STUDIES OF SEXUAL PHYSIOLOGY (Estudios de Fisiologia Sexual) tr. by Van W. Holsapple. 20 Nov 58, [9]p. (3 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-10819

Trans. of Gaceta Veterinaria (Argentina) 1941, v. 3, Dec, p. 67-70.

Using vasectomized rams to mark ewes in heat, the duration of the estral cycle in 1294 ewes of Lincoln, Romney-Marsh and Lincoln-Southdown breeds was determined. Over 90% in a flock subjected to no extraneous factors had a cycle duration of 16 to 18 days, with highest frequency in the 17-day cycle.

Trufanov, V. A.
VITAMIN B_{12} (COBALAMIN). [1959] 23p. 79 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-15622

Trans. of Voprosy Pitaniya (USSR) 1955, v. 14, no. 5, p. 3-12.

This review is concerned primarily with vitamin B_{12} in the diet of domestic animals. The bibliography upon which it is based is drawn largely from American sources.

Plant Cultivation

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Section I. Plant Physiology.
No. 8, Abstracts 34221-34307, JPRS: 1626-N, 59-13556
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No. 19, Abstracts 86605-86682, JPRS: 1607-N, 59-13542
Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
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No. 6, Abstracts 24690-24845, JPRS: 1441-N, 59-13395
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No. 17, Abstracts 77357-77470, JPRS: 1506-N, 59-13458
Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
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Section K. Forestry.
No. 6, Abstracts 24846-24917, JPRS: 1442-N, 59-13397
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No. 17, Abstracts 77471-77557, JPRS: 1502-N, 59-13454

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
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Section L. Meadow Cultivation.
No. 9, Abstracts 39120-39136, JPRS: 1571-N, 59-13505
No. 17, Abstracts 77471-77557, JPRS: 1502-N, 59-13454

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
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Section M. Cultivated Plants.
No. 5, Abstracts 20185-20375, JPRS: 1064-N, 59-13159
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No. 7, Abstracts 29868-29985, JPRS: 1421-N, 59-13377
No. 7, Abstracts 29987-30140, JPRS: 1431-N, 59-13385
No. 17, Abstracts 77560-77941, JPRS: 1589-N, 59-13525
Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958, NO. 17 (Soviet Abstracts. Biology). 30 Mar 59, 17p. JPRS: 1434-N.
Order from OTS $1.00 59-13388

Contents:
Section N. Weeds and Weed Control. Abstracts 77942-77973.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
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Section O. Plant Diseases.
No. 6, Abstracts 25311-25391, JPRS: 1362-N, 59-13303
No. 7, Abstracts 30182-30270, JPRS: 1460-N, 59-13404
No. 17, Abstracts 77992-78034, JPRS: 1435-N, 59-13389

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

ASTRONOMY

Astrophysics

A REVIEW OF SOVIET CELESTIAL-MECHANICS LITERATURE. 30 Sep 58 [261]p. 850 refs.
Order from OTS $4.00 59-11936

A detailed survey of the major aspects of Soviet work in celestial mechanics up to 1957 is presented which is based on 375 papers, each of which is briefly reviewed, summarizing the author's description of his problem, methods, results, and conclusions. Some of the work described is old. The bibliography contains 850 items; references to peripheral subjects such as rotation of the galaxy are not included. The text and the subject index to the bibliography are arranged under the following headings: two-body problems, capture in n-body problem, variable mass, figures of celestial bodies, cosmogony, and cosmogony of small bodies.

Strankevich, K. S.
INVESTIGATION OF RADIO EMISSION OF THE GALACTIC CENTER. AT A λ= 91.6 cm WAVELENGTH. 4 Mar 59, 5p. 5 refs. TS-40.
Order from LC or SLA mi$1.80, ph$1.80 59-14572

Trans. of *Astron[omicheskiy] Zh[urnal] (USSR) 1958, v. 35, no. 1, p. 157-159.

An experimental reception of radio emission of deuterium is described. The concentration of deuterium in interstellar space was found to be less than 10^{-3} atoms/cu cm.

Zamorskiy, A. D.
VISUAL OBSERVATIONS OF ARTIFICIAL SATELLITE. [1959] [4]p. 2 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15279

Trans. of Priroda (USSR) 1958 [v. 47] no. 11, p. 85-87.

Spectral variations of sunlight in its passage through the terrestial atmosphere as deduced from visual observation of the artificial satellites is discussed.

BIOLOGICAL SCIENCES

Anatomy and Physiology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Section S. Human and Animal Morphology.
No. 5, Abstracts 21655-21696, JPRS: 1473-N, 59-13422
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No. 15, Abstracts 69519-69700, JPRS: 1538-N, 59-13482
No. 17, Abstracts 78963-79162, JPRS: 1404-N, 59-13348
No. 18, Abstracts 83591-83780, JPRS: 1568-N, 59-13502
Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Section T. Human and Animal Physiology.
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No. 15, Abstracts 69706-70670, JPRS: 1635-N, 59-13565
No. 16, Abstracts 74423-75318, JPRS: 1567-N, 59-13501
No. 17, Abstracts 79166-80157, JPRS: 1468-N, 59-13414

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Baumgarten, R. v., Baumgarten, A. v., and Schäffer, K.-P.
A CONTRIBUTION TO THE QUESTION OF LOCALIZATION OF BULBORETICULAR RESPIRATORY NEURONS OF CAT. [1958] 15p. 16 refs.
Order from SLA mi$2.40, ph$3.30 59-10637

Trans. of Pflügers Archiv für die Gesamte Physiologie [des Menschen und der Tiere] (Germany) 1957, v. 264 [no. 3] p. 217-227.

Respiratory neurons were traced with the aid of microelectrodes in the rhombencephalon of the cat, and the isolated units were identified according to their phase relation to respiration and their behavior under succinyl. The location of respiratory neurons continuing to function in autonomic rhythm after cessation of breathing was marked on the tissue by means of an electrolytic point. Inspiratory neurons are always found in larger numbers in the area of the reticular substance immediately ventral to the tractus solitarius, and in the reticular tissue in the immediate vicinity of the caudal part of the nucleus ambiguus. Expiratory units were found in larger numbers in the caudal sections of the bulbar reticular substance. The respiratory structures here described constitute only a small segment of the central respiratory system. It is likely that such structures are related to the centripetal and centrifugal pathways of the vagus and the glossopharyngeal nerves.

Buchborn, E., Koczorek, Kh. R., and Wolff, H. P.
ALDOSTERONE, GLOMERULAR FILTRATE AND SODIUM RETENTION (Aldosteron, Glomerulusfiltrat und Natriumretention). [1959] [22]p. (2 figs. omitted) 49 refs.
Order from SLA mi$2.70, ph$4.80 59-15337

Trans. of Klin[ische] W[ochenschrift] (Germany) 1959, v. 37, [no. 2] p. 71-76.

Helvètius, Jean-Claude-Adrien.
ANATOMICAL OBSERVATIONS ON THE STOMACH OF MAN, WITH REFLECTIONS ON THE NEW SYSTEM, WHICH REGARDS THE TRITURATION IN THE STOMACH AS THE CAUSE OF THE DIGESTION OF THE FOOD (Observations Anatomiques sur l'Estomac de l'Homme, avec des Réflexions sur le Système Nouveau, qui Regarde la Trituration dans l'Estomac, comme la Cause de la Digestion des Alimens). [1959] 9p.
Order from SLA mi$1.80, ph$1.80 59-15613

Trans. of mono. Histoire de l'Académie Royale des Sciences, 1719, p. 336-349.

Joubert, G.
INTEGRATION OF THE PASSIVE MUSCULAR ELASTICITY OF THE SURAL TRICEPS AND TENSOR FASCIA LATA MUSCLES IN THE MECHANISM OF ERECT POSTURE. (Intégration de l'Élasticité Musculaire Passive des Muscles Triceps Sural et Tenseur du Fascia Lata dans le Mécanisme de la Station Droite). [1959] [4]p. 10 refs.
Order from SLA mi$1.80, ph$1.80 59-15550

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1955, v. 149, [no. 5/6] p. 540-543.

Electromyograms of the sural triceps and tensor fasciae latae are analyzed, and hypotheses on erect posture mechanisms are presented.

Ranvier, Louis-Antoine.
NEW RESEARCHES ON THE MODE OF UNION OF THE CELLS OF THE MALPIGHIAN LAYER (Nouvelles Recherches sur le Mode d'Union des Cellules du Corps Muqueux de Malpighi). [1959] 3p.
Order from SLA mi$1.80, ph$1.80 59-15526

Trans. of Aca[demie des] Sci[ences, Paris]. C[omptes] R[endus] 1879, v. 89, p. 667-669.

Thin unstained sections of plantar epidermis hardened by bicarbonate of ammonia, gum and alcohol were examined with an immersion lens. The cells of the malpighian layer are not absolutely individualized. Because they are entangled, and not welded by their filaments, it has always been impossible to determine their limits by impregnation with silver, and difficult to isolate them by dissociation.

Ranvier, Louis-Antoine.
ON A NEW SUBSTANCE OF THE EPIDERMIS AND ON THE PROCESS OF KERATINIZATION OF THE EPIDERMIC INTEGUMENT. (Sur une Substance Nouvelle de l'Epiderme et sur le Processus de Kératinisation du Revêtement Epidermique). [1959] 3p.
Order from SLA mi$1.80, ph$1.80 59-15525

Trans. of Acad[emie des] Sci[ences] Paris. Comptes Rendus, 1879, v. 88, p. 1361-1364.

Schlegel, B.
EXPERIMENTAL INVESTIGATIONS ON THE IMPROVEMENT OF HEAT TOLERANCE IN MAN. [1959] 7p. [tables and figs. omitted].
Order from SLA mi$1.80, ph$1.80 59-15647

Trans. of Klinische Wochensch[rift] (Germany) 1941, v. 20 [no. 20] p. 506-510.

Shershnev, Ye. A.
ON THE INFLUENCE PRODUCED BY CARNOSIN UPON PHOSPHORYLATION PROCESSES IN MUSCULAR TISSUE. [1959] 6p. 10 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15160

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 119, no. 4, p. 753-755.

Biochemistry

Balandin, A. A.
PRINCIPLES OF THE CHEMISTRY OF FERMENTS AND ANTIMETABOLITES FROM THE POINT OF VIEW OF THE THEORY OF CATALYSIS, tr. by Richard B. Mudge. [1958] 15p. 8 refs. (includes foreign text). UCRL Trans. 376.
Order from LC or SLA mi$2.40, ph$3.30 59-10385

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 114, no. 5, p. 1008-1011.

Chepinoga, O. P. and Kerova, N. I.
THE INFLUENCE OF NUCLEIC ACIDS ON THE RESPIRATION OF TISSUES (Vliyaniye Nukleynovykh Kislot na Dykhaniye Tkaney) tr. by E. Feigl. Sep 56, 5p. 5 refs. Trans. no. 3022.
Order from LC or SLA mi$1.80, ph$1.80 59-15046

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 98, no. 5, p. 819-820.

Fischer, Hans and Stadler, Friedrich.
OBTAINING OF DIHYDROPYROPHEOPHORBIDE A AND PYROPHEOPHORBIDE B FROM SHEEP FECES (Gewinnung von Dihydropyrophaophorbid A und Pyrophaophorbid B aus Schafkot). [1959] [20]p. 13 refs.
Order from SLA mi$2.40, ph$3.30 59-15306

Trans. of [Hoppe-Seyler's] Z[eitschrift für] Physiol[ogische] Chem[ie] (Germany) 1936, v. 239, p. 167-178.

Gárdos, G.
ACCUMULATION OF POTASSIUM ION BY HUMAN RED BLOOD CELLS (Akkumulation der Kaliumionen durch Menschliche Blutkörperchen). Dec 58, 11p. 11 refs.
Order from SLA mi$2.40, ph$3.30 59-10899

Trans. of Acta Physiologica (Hungary) 1954, v. 6 [no. 2/3] p. 191-198.

Yefimochkina, Ye. F. and Poznanskaya, A. A.
BIOLOGICAL SYNTHESIS OF PURINE AND PYRIMIDINE BASES AND OF MONONUCLEOTIDES. [1959] 17p. (3 figs. formulas 46 refs. omitted). 10 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15596

Trans. of Voprosy Meditsinskoy Khimii (USSR) 1957, v. 3, no. 4, p. 243-254.

Basic results of recent investigations are reviewed. The article is based largely on non-Soviet sources.

Zöller, Eberhard, Schreier, Kurt, and Yang, Pinpin Robert.
INFLUENCE OF CHLORPROMAZINE ON PROTEIN METABOLISM. [1959] 8p. 27 refs.
Order from SLA mi$1.80, ph$1.80 59-15247

Trans. of Arzneimittel-Forschung (West Germany) 1958, v. 8 [no.]4, p. 238-240.

The influence of chlorpromazine on incorporation of 1-C^{14}-glycocoll and -C^{14}-lysine in organs and tissue of rats is described. In vitro investigations reveal that the incorporation of lysine in liver proteins is inhibited in proportion to the quantity of chlorpromazine employed. In vivo experiments support these findings, revealing a marked inhibition of glycine incorporation rate after a chlorpromazine dose of 5 mg per kg/body wt. in rat.

General Biology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
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Section B. General Biology.
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Microbiology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
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Section E. Virology.
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REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
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Section F. Microbiology.
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No. 15, Abstracts 67045-67228, JPRS: 1403-N, 59-13347
No. 15, Abstracts 67235-67416, JPRS: 1623-N, 59-13554
No. 17, Abstracts 76500-76884, JPRS: 1492-N, 59-13432

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Bagmet, A. G.
BIOPREPARATIONS MADE ON A PEA HYDROLYTIC MEDIUM (Biopreparaty, Prigotovlennye Na Gorokhovo-Gidrolizno Srede). [1959] 6p. 4 refs. Trans. V1409.
Order from LC or SLA mi$1.80, ph$1.80 59-14678

Trans. of Gosudarstvennyy Nauchno-kontrol'nyy Institut Veterinarnykh Preparatov. Trudy (USSR) 1956, v. 6, p. 194-197.

Bonetti, Elio M.
MICROBIOLOGICAL RESEARCHES ON PETROLIFEROUS MEDIA AND MICROBIAL OXIDATION OF HYDROCARBONS. PART II. [1959] 49p. 5 refs.
Order from SLA mi$3.30, ph$7.80 59-15119

Trans. of la Ricerca Scientifica [ed il Progresso Technica nell'Economia Nazionale] (Italy) 1956, v. 26, no. 3, p. 779-802.

By means of enrichment cultures in the presence of phenanthrene and anthracene, prepared with drilling slurries from methane-oil wells in the Po Valley, with soils that had been in contact with hydrocarbons, and with other media, twenty microbic forms have been isolated that have the ability to utilize these organic compounds as sole source of carbon. The microorganisms were next tested on mineral nutrient medium with addition of various hydrocarbons in different instances. The following were employed in the course of the present work: octane, dodecane, hexadecane, cyclohexane, benzene, toluene, xylene, naphthalene, phenanthrene, anthracene and cholesterol. It was thus found that some forms are able only to utilize aromatic hydrocarbons, while others also utilize those of the aliphatic series. Their behavior on liquid or agar medium is divergent in some cases. It was also shown that the hydrogen ion concentration of the medium required for rapid metabolizing of phenanthrene and anthracene corresponds to neutral pH, and that development upon these hydrocarbons may begin rapidly and become pronounced even in cultures planted with extremely few cells.

Smorodintsev, A. A.
SUMMARY AND TASKS OF SPECIFIC PROPHYLAXIS AND TREATMENT OF INFLUENZA.
17 Apr 59, 14p. JPRS: 663-D.
Order from OTS $0.50 59-11515

Trans. of Akademiya Meditsinskikh Nauk SSSR. Vestnik, 1958, v. 13, no. 3, p. 20-30.

The principal results of an investigation of live influenza vaccine and anti-influenza serum, proposed for the 1936-38 campaign against the virus are presented. This is an expansion of a report delivered at the International Conference on standarization of biological preparations, Opatija (Yugoslavia), September 2-6, 1957.

Söhngen, N. L.
BENZENE, PETROLEUM, PARAFFIN OIL, AND PARAFFIN AS MICROBIAL SOURCE OF CARBON AND ENERGY. [1959] [25]p. (11 illus. omitted) 7 refs.
Order from SLA mi$2.70, ph$4.80 59-15254

Trans. of Zentralblatt für Bakteriologie, [Parasitenkunde und Infektionskrankheiten]. Abt. 2. (Germany) [1913] v. 37, p. 595-609.

Pathology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Section U. General Problems of Pathology.
No. 7, Abstracts 32397-32759, JPRS: 1354-N, 59-13296
No. 8, Abstracts 37024-37393, JPRS: 1365-N, 59-13305
No. 9, Abstracts 41851-42184, JPRS: 1503-N, 59-13455
No. 10, Abstracts 46662-47021, JPRS: 1465-N, 59-13410
No. 11, Abstracts 51475-51830, JPRS: 1638-N, 59-13568
No. 16, Abstracts 75344-75643, JPRS: 1603-N, 59-13534
No. 17, Abstracts 80184-80419, JPRS: 1422-N, 59-13378
No. 18, Abstracts 84706-85028, JPRS: 1619-N, 59-13551
Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Delaunay, Paul.
THE PARISIAN MEDICAL WORLD IN THE EIGHTEENTH CENTURY: EXCERPTS. [1959] 3p.
Order from SLA mi$1.80, ph$1.80 59-15611

Trans. of mono, le Monde Médical Parisien au Dix-huitième Siècle, Paris, 1906, p. 60-61, 108-109, 118-120, 130, 173, and 251.

Flury.
TREATMENT OF SKIN INJURIES RESULTING FROM HYDROFLUORIC ACID. [1959] [4]p. (1 fig. 1 table omitted) 5 refs.
Order from SLA mi$1.80, ph$1.80 59-15126

Trans. of Draeger-hefte (Germany) 1940, no. 206, p. 4396-4398.

Gerstenbrand, F. and Pateisky, K.
CLINICAL AND ELECTROMYOGRAPHIC EXPERIENCE WITH ATURBAN (10870) IN THE TREATMENT OF PARKINSON SYNDROME. (Klinische und Elektromyographische Erfahrungen mit 10870 (Aturban) bei der Behandlung des Parkinsonsyndroms). [1959] 11p. 6 refs.
Order from SLA mi$2.40, ph$3.30 59-15460

Trans. of Wien[er] Klin[ische] W[ochenschrift] (Austria) 1958, v. 70 [no. 49] p. 978-980.

In 61 patients with a Parkinson syndrome the drug 10870 (Aturban) a piperidine derivative, was clinically tested. Daily doses in tablet form of 7.5 to 15 mg were administered according to the severity of the case. In about 65% of the patients there was a favorable influence on both rigor and tremor. Side effects were slight.

Guiart, Jules.
REORGANIZATION OF MEDICINE AND SURGERY. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 59-15678

Trans. of French mono. History of French Medicine, its Past, its Present, its Future, Paris, 1947, p. 176-178.

Brief account of the abolition of the French medical faculties during the Revolution and their reestablishment in 1794.

Hirszfeld, L., Lille-Szykowicz, L., and Mossor, S.
THE INFLUENCE OF TWIN PREGNANCY ON ERTHROBLASTOSIS (l'Influence de la Grossesse Gémellaire sur l'Erythroblastose). [1959] 4p.
Order from SLA mi$1.80, ph$1.80 59-15544

Trans. of le Sang (France) 1948, v. 19 [no. 7] p. 417-419.

Case history of 2 multiple pregnancies (twins and triplets) following which all infants died of erythroblastosis, although 4 singly born siblings were healthy.

Holzer, Helmut and Kröger, Hans.
MECHANISM OF ACTION OF B 518 (ENDOXAN-ASTA) ON THE JENSEN SARCOMA AND INHIBITION OF CHEMOTHERAPY OF TUMORS BY THE VITAMIN NICOTINIC ACID AMIDE. (Zum Mechanisimus der Wirkung von B 518 (Endoxan-Asta) auf das Jensen-Sarkom und zur Hemmung der Chemotherapie von Turmoren durch das Vitamin Nicotinsäureamid). [1959] 7p. 10 refs.
Order from SLA mi$1.80, ph$1.80 59-15494

Trans. of Klin[ische] W[ochenschrift] (Germany) 1958, v. 36 [no. 14] p. 677-678.

Kipfer, Kurt.
POSTURAL HYPOTENSION; A THERAPEUTIC TRIAL WITH SYNTHETIC HYPERTENSIN II (Postural Hypotension; ein Therapieversuch mit Synthetischem Hypertensin II). [1959] [10]p. 12 refs.
Order from SLA mi$1.80, ph$1.80 59-15492

Trans. of Cardiologia (Switzerland) 1959, v. 34 [no. 2] p. 131-138.

In a case of postural hypotension, the therapeutic results of noradrenaline and synthetic hypertensin II, given by intravenous drip, were compared. Whereas

noradrenaline in moderate doses proved ineffective and in larger doses produced cerebral vascular disturbances, prolonged intravenous drip of hypertensin II, 4-6 γ per minute, prevented postural hypotension. This observation suggests that the two compounds may have different modes of action.

Mats-Rosins'ka, V. S.
THE ROLE OF THE CENTRAL NERVOUS SYSTEM IN THE MECHANISM OF ANAPHYLAXIS. 23 Feb 59, 3p. 10 refs. JPRS: L-645-N.
Order from OTS $0.50 59-13204

Trans. of Fiziologichnyy Zhurnal (USSR) [1958] v. 4, no. 5, p. 704-705.

Experiments with 53 dogs and a control series on 15 guinea pigs indicate that narcosis noticeably mitigates the development of sensitization of the organism. In cases in which sensitization is already an accomplished fact, general narcosis, independently of the type of narcotic substance used or the method by which it is administered, exerts almost no mitigating influence on the course of anaphylactic shock in dogs. In guinea pigs, narcosis completely stops the development of anaphylactic shock.

Shafranskiy, L. L.
GANGRENE OF THE LOWER EXTREMITIES FOLLOWING MEASLES (Gangrena Nishnich Konetshnostey Posle Kory). 25 Jan 59 [5]p.
Order from LC or SLA mi$1.80, ph$1.80 59-10848

Trans. of Pediatriya (USSR) 1954, no. 4, p. 80-81.

Case history.

Targamadze, K. S.
THE PROBLEM OF THE INTRATRACHEAL METHOD OF INTRODUCING DUST INTO ANIMALS. 7 Apr 59, 2p. JPRS: 1-699-N.
Order from OTS $0.50 59-13318

Trans. of Gigiyena Truda i Professional'nyye Zabolevaniya (USSR) 1958, v. 2, no. 2, p. 56.

Tkachenko, B. I.
ON ALTERATIONS OF CARDIAC OUTPUT AND VASCULAR TONUS IN EXPERIMENTAL HYPERTENSION. [1959] 6p. 15 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15158

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 119, no. 3, p. 617-620.

Pharmacology and Toxicology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Section V. Pharmacology and Toxicology.
No. 9, Abstracts 42194-42542, JPRS: 1556-N, 59-13494
No. 10, Abstracts 47039-47310, JPRS: 1610-N, 59-13544
No. 16, Abstracts 7566[illegible]-75961, JPRS: 1533-N, 59-13478
No. 17, Abstracts 80[illegible]-80761, JPRS: 1539-N, 59-13483

Complete trans[illegible]of those entries which were originally publis[illegible] the Sino-Soviet bloc and in Yugoslavia.

Carlier, J., Lejeune-Ledant, G. and Barac, G.
ANGIOTENSIN, 5-HYDROXYTRYPTAMINE AND THE PULMONARY CIRCULATION IN DOGS (Angiotensine, 5-Hydroxytryptamine et Circulation Pulmonaire chez le Chien). [1959] 6p. 14 refs.
Order from SLA mi$1.80, ph$1.80 59-15490

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] (France) 1958, v. 152, [no. 6] p. 1034-1038.

Analysis of the effects of angiotensin and 5-hydroxytryptamine (serotonin) in chloralosed dogs indicates that these substances, both of which cause a considerable hypertension and vasoconstriction of the great circulation, behave differently in regard to the pulmonary circulation. Whereas serotonin creates pulmonary hypertension and vasoconstriction, angiotensin does not produce any rise of the pulmonary arterial pressure or any detectable change in the pulmonary vascular tone.

Gross, F.
RENIN AND HYPERTENSIN, PHYSIOLOGICAL OR PATHOLOGICAL SUBSTANCES? (Renin und Hypertensin, Physiologische oder Pathologische Wirkstoffe?). [1959] 56p. 274 refs.
Order from SLA mi$3.60, ph$9.30 59-15688

Trans. of Klinische Wochenschrift (Germany) 1958, v. 36, [no. 15] p. 693-706.

This review of the present state of knowledge on the properties and actions of renin and hypertensin is based on a comprehensive bibliography. It is concluded that renin or a substance closely related to it participates either itself or perhaps by mediation of hypertensin under physiological conditions in the regulation of renal activity and that there are interrelations with the substances of the adrenal cortex. It is probable that measures which impair the normal regulation of renin secretion may produce pathological changes, but it is not known whether analogous mechanisms play a role in hypertensive disease in man.

Kolosov, M. N., Karapetyan, M. G., and Chaman, E. S.
INITIAL STAGES IN THE SYNTHESIS OF TETRACYCLINES. [1959] 4p. 12 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15747

Trans. of Akademiya Nauk SSSR. [Doklady] [1957, v. 112, no. 4, p. 669-672].

Kommiller, A. E.
A BRAIN EXTRACT POSSESSING INHIBITORY ACTIVITY. 4 Mar 59, 5p. 9 refs.
Order from SLA mi$1.80, ph$1.80 59-15391

Trans. of Arzneimittel-Forschung (West Germany) 1958, v. 8, Oct. p. 675-676.

Extracts from the brains of rabbits sacrificed immediately after the last convulsion following a series of daily electroshocks were injected intramuscularly into various test animals. Monkeys showed a marked inhibition of motility and a lessening of excitability for about 3 days following injection. It is suggested that the extracts may be of interest in their effect on epileptics.

Kovalenko, V. N.
THE PHARMACO-CHEMICAL AND PHARMACOLOGICAL CHARACTERISTICS OF DICTAMNINE OBTAINED FROM DICTAMNUS ALBUS TURKESTANICUS. [1959] 2p.
Order from LC or SLA mi$1.80, ph$1.80 59-15218

Trans. of Farmatsiya (USSR) 1946, v. 9, no. 5, p. 20.

Kradolfer, F., Neipp, L., and Tripod, J.
NEW EXPERIMENTAL CONTRIBUTIONS TO THE TUBERCULOSTATIC EFFECT AND THE TOXICITY OF VIOMYCIN (Neue Experimentelle Beiträge zur Tuberkulostatischen Wirkung und zur Toxizität von Viomycin). [1959] 14p.
Order from SLA mi$2.40, ph$3.30 59-10828

Trans. of extract from mono. Neue Tuberkulostatika und Tuberkulostatika-Resistenz von Tuberkelbakterien, Freiburg, Feb 58.

Bacteriological and toxicological data derived from experiments with mice are presented and compared with data from the literature. Vionactan is as effective as viomycin in experimental tuberculosis, and is significantly less toxic.

Lafond, Louis.
JOTTINGS FROM THE HELVÉTIUS DYNASTY. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 59-15676

Trans. of mono. La Dynastie des Helvétius. Les Remèdes du Roi, Paris, 1925, Editions Occitania.

Ludány, G. et al.
NOVOCAIN AND THE HYPOPHYSIS-ADRENAL-GLAND-SYSTEM. [1959] 2p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15456

Trans. of Orvosi Hetilap (Hungary) 1957, v. 98, p. 1018.

Mlinchow, Otto.
EFFECT OF PHARMACEUTICALS ON SECRETORY ACTIVITY AND ULCER DEVELOPMENT IN THE STOMACH OF THE SHAY RAT. [1959] 15p. (2 figs. omitted) 14 refs.
Order from SLA mi$2.40, ph$3.30 59-15246

Trans. of Arzneimittel-Forschung (West Germany) 1954, v. 4 [no. 5] p. 341-344.

Rentchnick, P.
THE LONG-ACTING SULFONAMIDES (Les Sulfamides-Retard). [1958] 3p.
Order from SLA mi$1.80, ph$1.80 59-10837

Trans. of Concours Médical (France) 1958, v. 80 [no. 20] p. 2455ff.

The compounds discussed are 3-sulfanilamido-6-methoxypyridazine and 3-(p-amino-benzolsulfonamido)-2-phenylpyrazole. No side effects relating to blood morphology or renal function were observed in 100 cases treated with these drugs, but 2 cases of leukopenia are known to the author.

Tsunoo, S. and others.
PHARMACOLOGICAL STUDIES OF NICOTINE. THE EFFECT AND THE TOXICITY OF NICOTINE ON THE GENERAL DEVELOPMENT OF CHICK EMBRYOS. [1958] 30p.
Order from ATS $46.95 ATS-65K28J

Trans. of Showa [Igakkai. Zasshi] (Japan) 1954, v. 14, no. 3, p. 223-245.

Tsunoo, S.
THE PHARMACOLOGY OF TOBACCO. [1958] 15p.
Order from ATS $19.80 ATS-66K28J

Trans. of Showa [Igakkai. Zasshi] (Japan) 1958, v. 17, no. 6, p. 481-489.

Radiobiology

Ayrapetyants, M. G.
SCIENTIFIC CONFERENCE ON THE EFFECT OF IONIZING RADIATION OF THE HIGHER DIVISIONS OF THE CENTRAL NERVOUS SYSTEM (NO. 2). 4 Feb 59, 5p. JPRS: L-519-N.
Order from OTS $0.50 59-13108

Trans. of Meditsinskaya Radiologiya (USSR) 1958, v. 30, no. 5, p. 95-96.

Topics are noted of the 26 papers which were read and discussed at the conference on May 8 to 10, 1958 under the sponsorship of the Institute of Higher Nervous Activity of the Academy of Sciences USSR. Representatives of more than 30 scientific institutions participated.

Kreyberg, L.
ON RADIOSENSITIVITY. [1958] 17p. (14 figs. 1 table omitted).
Order from SLA mi$2.40, ph$3.30 NP-tr-195

Trans. of Nordisk Medicin (Sweden) 1958, v. 59, no. 25, p. 827-832.

The effects of ionizing radiation on the living organism are briefly surveyed. The results of exposure under various conditions depend upon primary, secondary, or even tertiary factors in individual cells, tissues or organs. Radiosensitivity per se is rarely observed: what is observed is damage accompanied by regenerative processes, tissue adjustment, complications, and further reactions. A distinction is made between radiosensitivity and radiocurability. Lymphoid tissues, for instance, which contain radiosensitive cells may also contain a number of radioresistant neoplastic cells.

Nesterin, M. F. and Yeremin, G. P.
THE INFLUENCE OF NUTRITION ON THE COURSE OF RADIATION INJURIES IN ANIMALS. 27 Jan 59, 11p. 71 refs. JPRS: L-1437-D.
Order from OTS $0.50 59-11431

Trans. of Voprosy Pitaniya (USSR) 1958, v. 17, no. 5, p. 3-8.

Literature data are reviewed which show that nutrition exerts a rather substantial effect upon the course and outcome of radiation sickness, and that the application of definite diets results in an increased resistance of the organism.

Sadchikova, M. A. and Orlova, A. A.
CLINICAL PICTURE OF THE CHRONIC EFFECT OF ELECTROMAGNETIC MICROWAVES. 3 Feb 59, 8p. 5 refs. JPRS L-1451-D.
Order from OTS $0.50 59-11437

Trans. of Gigiyena Truda i Professional'nyye Zabolevaniya (USSR) 1958, v. 2, no. 1, p. 18-22.

Observations are discussed which indicate that the effect of microwaves is manifested by such specific symptoms as headache, disturbed sleep, changes in the memory, and rapid exhaustion of intellectual functions against a background of vascular hypotension and bradycardia.

Yakovlev, V. G. and Ivanov, I. I.
CHEMICAL PROTECTION OF ANIMALS AGAINST THE ACTION OF X-RAYS. 4 Feb 59, 9p. 15 refs. JPRS: L-515-N.
Order from OTS $0.50 59-13104

Trans. of Meditsinskaya Radiologiya (USSR) 1958, v. 30, no. 5, p. 14-19.

Experiments on white rats, white mice, rabbits and dogs showed that the protective action of cysteine depends upon its purity. Mixtures of certain ratios of cysteine and NaCN gave increased protection to rodents, yet other proportions aggravated radiation sickness. Parenteral administration of cysteine, and cysteine with NaCN showed a protective effect which was weaker in rabbits and dogs than in rats. With oral administration of these substances to rabbits and dogs there was no detectable protective action. In dogs, the protective substances were vomited up and lost.

Surgery

Braun, Heinrich.
HEINRICH BRAUN: AUTOBIOGRAPHY. 21 Feb 59 [4]p.
Order from SLA mi$1.80, ph$1.80 59-10843

Partial trans. of mono. die Medizin der Gegenwart in Selbstdarstellungen, Leipzig, 1925, p. 1-34 (summary only).

Clermont, G.
LATERAL AND CIRCULAR SUTURE ON THE VEINS (Suture Latérale et Circulaire des Veines). [1959] 7p.
Order from SLA mi$1.80, ph$1.80 59-15524

Trans. of la Presse Médicale (France) 1901, v. 9, p. 229-233.

Samson, J. E. and Lafond, Guy.
SYNOVECTOMY FOR CHRONIC ARTHRITIS OF THE KNEE (La Synovectomie dans l'Arthrite Chronique du Genou). Feb 59 [14]p. [1 fig. omitted] 52 refs.
Order from SLA mi$2.40, ph$3.30 59-10707

Trans. of Revue de Chirurgie Orthopédique [et Réparatice de l'Appareil Moteur] (France) 1951, v. 37, Oct/Dec, p. 395-407.

Zoology

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Section G. Zooparasitology.
No. 8, Abstracts 33903-34014, JPRS: 1275-N, 59-13223
No. 9, Abstracts 38556-38654, JPRS: 1350-N, 59-13293
No. 10, Abstracts 43367-43449, JPRS: 1463-N, 59-13408
No. 11, Abstracts 48154-48254, JPRS: 1528-N, 59-13473
No. 13, Abstracts 57831-57965, JPRS: 1521-N, 59-13472

No. 15, Abstracts 67442-67568, JPRS: 1630-N, 59-13558
No. 16, Abstracts 72232-72357, JPRS: 1618-N, 59-13550
No. 17, Abstracts 76910-77056, JPRS: 1484-N, 59-13427

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. BIOLOGIYA (USSR) 1958 (Soviet Abstracts. Biology).
Order from OTS $1.00 each

Section P. General and Special Zoology. Insects.
No. 2, Abstracts 6635-6869, JPRS: 1546-N, 59-13488
No. 7, Abstracts 30448-30635, JPRS: 1410-N, 59-13354
No. 8, Abstracts 35141-35335, JPRS: 1455-N, 59-13403
No. 9, Abstracts 39846-40142, JPRS: 1615-N, 59-13548

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

CHEMISTRY

*AKADEMIYA NAUK SSSR. OTDELENYE KHIMICHESKIKH NAUK. IZVESTIYA, 1958 (News of the Academy of Sciences of the USSR, Department of Chemical Sciences). [1959]
Order from OTS $0.70, $4.00/6 mo.
Foreign $0.95, $5.50/6 mo.

No. 10, p. 1157-1282, PB 141 055T-11
No. 11, p. 1285-1403, PB 141 055T-12
No. 12, p. 1405-1500, PB 141 055T-13

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1959 (Soviet Abstracts. Chemistry).
Order from OTS $1.00 each

Section B. Physical Chemistry.
Section C. Inorganic Chemistry.
No. 1, Abstracts 68-683, JPRS: 1516-N, 59-13465
No. 2, Abstracts 3525-4165, JPRS: 1651-N, 59-13574

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958, NO. 23, Abstracts 76901-77538 (Soviet Abstracts. Chemistry). 28 Apr 58, 104p. JPRS: 1541-N.
Order from OTS $1.00 59-13485

Contents:
Section B. Physical Chemistry
Section C. Inorganic Chemistry
Section D. Cosmochemistry, Geochemistry, Hydrochemistry
Section E. Analytical Chemistry
Section F. Laboratory Equipment
Section G. Organic Chemistry

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958, 1959 (Soviet Abstracts. Chemistry).
Order from OTS $1.00 each

Section C. Inorganic Chemistry.
Section D. Cosmochemistry, Geochemistry, Hydrochemistry.
1958, no. 17, Abstracts 56979-57081, JPRS: 1458-N, 59-13407
1959, no. 1, Abstracts 689-838, JPRS: 1496-N, 59-13453

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958, NO. 24, Abstracts 80949-81448 (Soviet Abstracts. Chemistry). 12 May 59, 45p. JPRS: 1579-N.
Order from OTS $1.00 59-13512

Contents:
Section C. Inorganic Chemistry
Section D. Cosmochemistry, Geochemistry, Hydrochemistry
Section E. Analytical Chemistry
Section F. Laboratory Equipment

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

*ZHURNAL OBSHCHEY KHIMII (USSR) 1958, V. 28 (Journal of General Chemistry). [1959]
Order from OTS $1.40, $7.50/6 mo.
Foreign $1.65, $9.00/6 mo.

No. 4, p. 845-1121, PB 141 075T-12
No. 12, p. 3157-3351, PB 141 075T-13

Consists of abstracts in English.

Analytical Chemistry

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958, NO. 7 (Soviet Abstracts. Chemistry). 11 Mar 59, 12p. JPRS: 1355-N.
Order from OTS $1.00 59-13297

Contents:
Section E. Analytical Chemistry. Abstracts 21127-21247.

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958, 1959 (Soviet Abstracts. Chemistry).
Order from OTS $1.00 each

Section E. Analytical Chemistry.
Section F. Laboratory Equipment.
1958, no. 13, Abstracts 42993-43157, JPRS: 1440-N, 59-13394
1959, no. 1, Abstracts 860-1121, JPRS: 1534-N, 59-13479

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Dozinel, Ch. -M.
DETERMINATION OF TRACES OF ARSENIC IN COPPER. DETECTION OF SELENIUM AND TELLURIUM. (Dosage de Traces d'Arsenic dans le Cuivre. Detection du Selenium et du Tellure). [1958] [6]p. 7 refs.
Order from SLA mi$1.80, ph$1.80 59-10657

Trans. of Ing[enieur] Chim[iste] (Belgium) 1956, v. 38, p. 35-40.

An improved photometric method for the determination of arsenic content in copper is described, in which an "Elko" Ziess photometer with an S .45 filter is used. 20ml of dilute HCl, 10ml of distilled H_2O and 10ml of hypophorous acid are added to a 10ml (1g) sample and stirred until the solution becomes completely colorless. 25ml of solution is introduced into an 18mm test tube and placed in boiling H_2O for 10 min and cooled in cold H_2O for 5 min. The solution is then transfered to a clean photometric cell (5cm), with a .1% transmission, and the measurement made after 5 min. Distilled H_2O is used as a comparison solution. The As content is extrapolated directly from a standard curve. Sellenium and Tellurium may be measured from the remaining solution 5 min later.

Erdey, Laszlo and Banyai, Eva.
APPLICATION OF PRECIPITATE EXCHANGE REACTIONS IN ANALYTICAL CHEMISTRY. III. DETERMINATION OF SULFATE AND SULFIDE (Anwendung von Fällungsaustauschreaktionen in der Analytischen Chemie. III. Bestimmung von Sulfat und Sulfid). [1958] 16p. 20 refs. Tr57-76.
Order from SLA mi$2.40, ph$3.30 59-10653

Trans. of Acta Chimica (Hungary) [1955] v. 8, p. 409-422.

Eskin, B. E. and Okuneva, M. G.
ON THE LIGHT SCATTERING METHOD OF INVESTIGATING THE POLYDISPERSITY OF POLYMERS, tr. by A. L. Monks. 4 Mar 59, 12p. 9 refs. (Includes foreign text)
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3601

Trans. of Zhurn[al] Fiz[icheskoy] Khim[ii] (USSR) 1958, v. 32 [no. 7] p. 1532-1535.

The angular distribution of the light scattering of solutions of fractionated polystyrene samples and their mixtures in butanone are investigated. The average weight and average molecular weights of the mixtures as determined by the scattering of light are in satisfactory agreement with their values computed from the weight composition of the mixtures.

Goryushina, V. G. and Vladimirova, V. M.
CONTEMPORARY STATE OF ANALYTICAL CHEMISTRY OF ZIRCONIUM, tr. by Mr. Hanzely. 20 Aug 57, 16p. 105 refs.
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3461

Trans. of Zavodskaya Laboratoriya (USSR) 1956, v. 22 [no. 10] p. 1171-1180.

Literature is surveyed on analytical methods of determining micro and macro amounts of Zr in ores, minerals, rocks, and steel. Zr can be separated from other elements and quantitatively analyzed by gravimetric, volumetric, and colorimetric methods. Chemicals employed, techniques, procedures, and advantages and disadvantages of each method are summarized. No direct chemical method for the separate determination of Zr and Hf is known when the elements are both present in the material being analyzed. Known methods give only the total amounts of the 2 elements present. Indirect chemical analytical procedures based on the difference in atomic weights are complicated and have a limited application. Separate determinations for Zr and Hf employ physical agents, such as Roentgen spectrum analysis and optical spectrum analysis.

Kovats, E.
GAS-CHROMATOGRAPHIC CHARACTERIZATION OF ORGANIC COMPOUNDS. PORTION I. RETENTION INDICES OF ALIPHATIC HALIDES, ALCOHOLS, ALDEHYDES AND KETONES. [1959] 37p. 18 refs.
Order from SLA mi$3.00, ph$6.30 59-15334

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1958, v. 41 [no. 7] p. 1915-1932.

For the characterization of organic substances in gas chromatography a number termed "retention index"

is proposed. A simple relation exists between the retention index of a compound on a non-polar stationary phase and its boiling point. The advantages of the retention index are: (a) its dependence on temperature is small and linear; (b) it is independent of the column constants and of the type of chromatographic apparatus used; (c) it provides information about the chemical nature of substances under examination. To achieve a defined separation of two compounds on any given chromatographic column, a minimum difference in their retention indices is required. An equation (35) is given relating this minimum difference to the temperature of the column.

Leroy, R.
A CORRECT METHOD OF EXPRESSING MOISTURE CONTENT (Une Methode Correcte de Dosage de l'Eau). [1959] [16]p. Trans. no. 4092.
Order from SLA mi$2.40, ph$3.30 59-15290

Trans. of Chimie Analtyique (France) 1954, v. 36, no. 11, p. 294-301.

A method for determining moisture content is described, taking into account the mechanism of dehydration in ovens. The method makes it possible to calculate the residual water, i.e. the water remaining in dry matter when equilibrium has been extablished.

Nazarenko, V. A.
ANALYSIS OF PURE METALS. 30 Mar 59, 9p. 44 refs. TN-10.
Order from LC or SLA mi$1.80, ph$1.80 59-14739

Trans. of Zavod[skaya] Lab[oratoriya] (USSR) 1957, v. 23, no. 10, p. 1162-1167.

Developments in methods of determining impurities with concentrations of 10^{-5} to 10^{-9}% in pure metals are discussed in a paper based largely on Soviet sources. Radioactive, chemical and the prospective evaporation methods are evaluated.

Nikitin, B. A., Kovalskaya, M. P. and Pushlenkov, M. F.
ON THE METHOD OF THERMAL ANALYSIS OF SYSTEMS WITH A VOLATILE COMPONENT. [1958] 6p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-10278

Trans. of Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izvest[iya] 1951, no. 6, p. 661-665.

Picciotto, E. and Wilgain, S.
THE DETERMINATION OF THORIUM ON THE MILLIMICROGRAM SCALE. [1958] 11p. 21 refs.
Order from SLA mi$2.40, ph$3.30 AEC-tr-3483

Trans. of Analytica Chimica Acta (Netherlands) 1957, v. 16 [no. 6] p. 530-540.

Thorium in solution is measured by the tracks of α-particles, formed from daughter products of Th^{232} in nuclear photographic emulsions. It is possible to detect radioactive Th in equilibrium with 10^{-9} g Th contained in a volume of several hundredths of a milliliter, in the presence of all the other stable or radioactive nuclides. The accuracy is chiefly limited by the statistical fluctuations of the number of disintegrations. The experimental errors are of the order of ±3%. The method has been checked on standard solutions. The experimental techniques, diffusion of thoron, and interference of radioactinium are discussed in detail.

Sharkov, V. I. and Guzhavina, V.
BINARY COMPOUNDS OF GLUCOSE WITH INORGANIC SALTS. [1959] 5p.
Order from ATS $6.40 ATS-21L30R

Trans. of *Zhur[nal] Priklad[noy] Khim[ii] (USSR) 1958, v. 31, no. 11, p. 1759-1761.

Tabakova, E. G. and Solov'yeva, Z. V.
DETERMINATION OF BIVALENT AND TERVALENT TITANIUM IN MOLTEN ALKALI METAL CHLORIDES AFTER ELECTROLYSIS. [1959] 4p.
Order from ATS $5.40 ATS-35L30R

Trans. of Zavodskaya Lab[oratoriya] (USSR) 1956, v. 22, no. 12, p. 1417-1419.

Takahashi, Akira and Yamazaki, Isamu.
COLORIMETRIC DETERMINATION OF THE METHYLOL METHYL ETHER GROUP. Rept. no. 1 on Studies on the Melamine-Formaldehyde Resins. [1958] 11p. 11 refs.
Order from SLA mi$2.40, ph$3.30 59-10508

Trans. of Köbunshi Kagaku (Japan) 1958, v. 15, no. 156, p. 228-232.

The method of determining the methoxy groups of methylated methylol melamine and urea was investigated. Methyl ether was hydrolyzed with acids to give methanol quantitatively, which was determined colorimetrically according to Takayama's procedure. It was ascertained that the co-condensation components, such as urea, guanyl urea, and dicyanciamide did not interfere with this method.

Zaykovskiy, F. V. and Gerkhardt, L. I.
PHOTOMETRIC DETERMINATION OF THORIUM BY "ARSENAZO" IN THE PRESENCE OF ZIRCONIUM, TITANIUM AND RARE EARTH ELEMENTS. [1959] 8p.
Order from ATS $11.10 ATS-83L29R

Trans. of *Zhur[nal] Anal[iticheskoy] Khim[ii] (USSR) 1958, v. 13, no. 3, p. 274-279.
Another translation is available from LC or SLA mi$2.40, ph$3.30 as AEC-tr-3485, 25 Nov 58, 11p.

Inorganic Chemistry

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958 (Soviet Abstracts. Chemistry).
Order from OTS $1.00 each

Section C. Inorganic Chemistry.
No. 13, Abstracts 42793-42992, JPRS: 1439-N, 59-13393
No. 15, Abstracts 49790-49837, JPRS: 1514-N, 59-13464

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

ZHURNAL NEORGANICHESKOY KHIMII (USSR) 1958, V. 3 (Journal of Inorganic Chemistry). [1959]
Order from OTS $0.80, $4.50/6 mo.
Foreign $1.05, $6.00/6 mo.

No. 8, p. 1721-1989, PB 141 074T-9
No. 12, p. 2593-2810, PB 141 074T-8

Consists of abstracts in English.

Boullé, A.
PHOSPHATES OF POTASSIUM. [1959] 3p.
Order from ATS $5.15 ATS-64L29F

Trans. of [Academie des Sciences, Paris]. Compt[es] Rend[us] (France) 1955, v. 241, p. 1772-1775.

Faddeyeva, M. S., Pavlov, O. N. and Bakunina, V. V.
EXTRACTION METHOD FOR THE SEPARATION OF TECHNETIUM FROM IRRADIATED MOLYBDENUM (Ekstraktsionnyy Metod Vydeleniya Tekhnetsiya iz Obluchennogo Molibdena). 26 Nov 58 [7] (includes foreign text)
Order from LC or SLA mi$1.80, ph$1.80 AEC-tr-3490

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1958, v. 3, no. 1, p. 165-166.

Rudorff, W. and Schulze, E.
THE ALKALI-GRAPHITE COMPOUNDS, tr. by S. Asher. 23 Nov 57, 12p. (3 figs. 8 tables omitted) 15 refs. NP-tr-66.
Order from SLA mi$2.40, ph$3.30 59-15293

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1954, v. 277, p. 156-171.

Wiberg, Egon and Bauer, Richard.
NOTE ON MAGNESIUM BOROHYDRIDE $Mg(BH_4)_2$. 5 May 59, 2p.
Order from SLA mi$1.80, ph$1.80 59-15154

Trans. of Z[eitschrift für] Naturforschung (West Germany) 1950, v. 5B [no. 7] p. 397.

Organic Chemistry

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958, 1959 (Soviet Abstracts. Chemistry).
Order from OTS $1.00 each

Section G. Organic Chemistry.
1958, no. 13, Abstracts 43177-43504, JPRS: 1469-N, 59-13415
1958, no. 23, Abstracts 77542-77872, JPRS: 1483-N, 59-13426
1958, no. 24, Abstracts 81497-81802, JPRS: 1437-N, 59-13391
1959, no. 1, Abstracts 1133-1459, JPRS: 1573-N, 59-13507
1959, no. 2, Abstracts 4608-4825, JPRS: 1580-N, 59-13513

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Avramenko, L. I. and Kolesnikova, R. V.
REACTIONS OF FREE ETHYL RADICALS WITH MOLECULAR OXYGEN. [1959] 11p. 8 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15451

Trans. of *Akad[emiya] Nauk SSSR. [Otdeleniye] Khim[icheskikh] Nauk. Izvestiya, 1958, no. 10, p. 1192-1198.
Another translation is available from ATS $8.20 as ATS-47L29R [1958] 9p.

Bier, G[erhard].
POLYPROPYLENE. [1959] 29p. (6 figs. 14 tables omitted).
Order from SLA mi$2.70, ph$4.80 59-15005

Trans. of Kunststoffe (West Germany) 1958, v. 48, no. 8, p. 354-362.
Another translation is available from SLA mi$2.70, ph$4.80 as 59-15592, 1959, 29p.

A theory of polymerization activation, based on equations, is discussed in which the subgroup compound, titanium chloride participates in the reaction, the start up and the chain growth. Stereospecific catalysts, having a composition different from that of Natta's catalysts as well as the basic parameters of a technical process for the production of polypropylene are discussed and the effect of the different variables on the polymerization velocity and the mol wt are investigated.

Bier, Gerhard.
POLYPROPYLENE. [1959] [29]p. 12 refs.
Order from SLA mi$2.70, ph$4.80 59-15592

Trans. of Kunststoffe (West Germany) 1958, v. 48, [no. 8] p. 354-362.
Another translation is available from SLA mi$2.70, ph$4.80 as 59-15005, 1959, 29p.

For abstract see 59-15005 above.

Ehlers, Jo[hannes].
MEASUREMENT OF THE HYDROGEN-EXPONENT (pH) IN MELAMINE (SOLUTION). [1959] 3p. (11 figs. omitted).
Order from SLA mi$1.80, ph$1.80. 59-15661

Trans. of Farbe und Lack (West Germany) 1957, v. 63 [no. 8] p. 384-387.

Fourneau, E. and Ribss, I.
THE ACTION OF WATER AND ALCOHOLS ON ETHYLENE OXIDES IN THE PRESENCE OF A CATALYZER. [1959] 5p.
Order from SLA mi$1.80, ph$1.80 59-10670

Trans. of Soc[iété] Chim[ique de France]. Bull[etin], 1926, v. 39, no. 4, p. 1584-[1589].

Gabel, G.
THE REACTION BETWEEN ETHYLENE OXIDE AND METHYLANILINE AND ETHYLANILINE. [1959] 6p. 8 refs.
Order from SLA mi$1.80, ph$1.80 59-10681

Trans. of Soc[iété] Chim[ique] de France. Bull[etin], 1927, v. 41, p. 939-940.

Leibnitz, E. and Naumann, K.
DI-HYDROXYARYL-DIALKYLMETHANE. [1959] [15]p. 29 refs. T-2902.
Order from SLA mi$2.40, ph$3.30 59-15249

Trans. of Chemische Technik (East Germany) 1951, v. 3, no. 1, p. 5-10.

Laboratory and technical methods were repeated which thus far had become known for the preparation of di-hydroxyaryl methanes, by condensation of aliphatic ketones with phenols. On the basis of more recent views about the course of reaction in organic chemistry, it was possible to classify a series of heretofore uncertain questions about the course of the reaction both as regards alkyl phenols and the color of the reaction solutions occurring as by-products and in intermediate steps; they are explained on the basis of mesomer formation with meriquinoid quinone methide derivatives. The technical procedures employed, to the extent that they are known in the literature for the preparation and purification of di-hydroxyphenyl propane, resulted in only partial agreement with the data given in the literature. Whenever a pure product is required, the average yield in technical production might barely exceed 70%, based on acetone.

Livshits, I. A. and Korobova, L. M.
THE POLYMERIZATION OF HIGHER DIENE HYDROCARBONS. [1959] 5p. 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15507

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 121, no. 3, p. 474-476.
Another translation is available from ATS $3.75 as ATS-20K28R, 1958, 3p.

Mikhaylov, B. M. and Tutorskaya, F. B.
ORGANOBORON COMPOUNDS. ALLYL DERIVATIVES OF BORON. 25 Mar 59 [9]p. 4 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15502

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 123 [no. 3] p. 479-482.

Nakazawa, K[oichi], Matsuura, S[hin], and Baba, S[higeo].
STUDIES ON THE APPLICATION OF POLYPHOSPHORIC ACID AS A CONDENSING AGENT. III. ACYLATION OF PHENOLS BY MEANS OF BENZOIC ACID AND MONOHYDROZYBENZOIC ACIDS. [1959] 10p. 2 refs. T-2889.
Order from SLA mi$1.80, ph$1.80 59-15020

Trans. of [Yakugaku Zasshi] (Japan) 1954, v. 74, no. 5, p. 498-501.

Natta, G. [Mazzanti, G., and Longi, P.]
ATACTIC AND STEREOBLOCK POLYMERS FROM ALPHA-OLEFINS. [1959] [17]p. 15 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15515

Trans. of la Chimica e l'Industria (Italy) 1958, v. 40 [no. 3] p. 183-188.

Natta, G. and Crespi, G.
THE ELASTOMERIC PROPERTIES OF ETHYLENE-PROPYLENE COPOLYMERS [1959] [12]p. 21 refs.
Order from SLA mi$2.40, ph$3.30 59-15628

Trans. of la Chim[ica] e l'Ind[ustria] (Italy) 1959, v. 41, no. 2, p. 123-128.

The synthesis of linear polyhydrocarbons that are essentially saturated and possess good elastomeric properties has been found to be possible through copolymerization of ethylene with alpha-olefins. This note takes up in particular the viscoelastic properties of the amorphous copolymers of ethylenepropylene, widely different from those of crystalline copolymers and from those of mechanical mixtures of the two homopolymers. The dynamic properties of such copolymers are favorable even at very low temperatures; the flexibility of the macromolecules increases with the growth of the ethylene content, accompanied by a drop in the minimum temperature for the impact resilience.

Natta, G. and Rigamonti, R.
EXAMINATION OF SOME VINYL POLYMERS WITH ELECTRON RAYS. [1958] 12p. (4 figs. omitted) 4 refs.
Order from SLA mi$2.40, ph$3.30 59-10813

Trans. of Accad[emia Nazionale dei] Lincei. Classe [di] Sci[enze] Fiz[iche] Mat[ematiche e] Nat[urali. Rendiconti] (Italy) 1936 [ser. 6] v. 24, p. 581-588.

The interferences produced by electron rays on thin films of some linear vinyl polymers are examined. The electronic photographs demonstrate that some polymers (polystyrene A, polyvinyl acetate) present bands of interference analogous to those of liquids, while some others (polystyrene B, polydichloroethylene) furnish some lines of interference indicating a clearly crystalline structure, and still others (polyvinyl chloride, polyvinyl bromide, polyvinyl alcohol) present intermediate photographs. In general, the products of relatively low mol wt, though being solids present structures different from higher ones, and similar to those of liquids. There are some discussions particularly on cross-link distances common to various vinyl polymers.

Natta, Giulio.
KINETIC TREATMENT OF THE FORMATION OF STEREOBLOCK POLYMERS. [1958] 15p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-10809

Trans. of [Accademia Nazionale dei] Lincei. [Classe di] Sc[ienze] Fiz[iche] Mat[ematiche] e Nat[urali] Rend[iconti] (Italy) 1958 [ser. 8] v. 24, no. 3, p. 246-255.

Natta, G. [Pasquon, I. and Giachetti, E.].
KINETICS OF PROPYLENE POLYMERIZATION WITH HIGHLY STEREOSPECIFIC HETEROGENEOUS CATALYSTS. PART II. NATURE OF THE PERIOD OF INCREASING POLYMERIZATION RATE. [1959] [21]p. 6 refs.
Order from SLA mi$2.40, ph$3.30 59-15513

Trans. of la Chimica e l'Industria (Italy) 1957, v. 39, no. 12, p. 1002-1012.

Natta, G., Pino, P. and others.
STEREOSPECIFIC POLYMERIZATION OF α-OLEFINS. [17 Apr 59] 12p. 14 refs.
Order from RIS $17.00 RIS rept. 96959

Trans. of la Chimica e l'Industria (Italy) 1956, v. 38, p. 124-127.

Natta, Giulio, Pino, Piero, and Mazzanti, Giorgio.
STEREOSPECIFIC POLYMERIZATION OF α-OLEFINES. PART I. [1959] 37p. 48 refs.
Order from SLA mi$3.00, ph$6.30 59-15049

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1957, v. 87 [no. 5] p. 528-548.

The stereoisomerism phenomena are illustrated in high linear vinyl polymers and a discussion is presented of the presumed theories which a polymerization process must satisfy in order to be stereospecific. The procedures used for the separation of stereoisomeric macromolecules from their mixtures are described.

Nikol'skiy, G. P., Bagdasay'yan, Z. A. and Kazarnovskiy, I. A.
OZONIDES OF SODIUM, RUBIDIUM AND CESIUM. 4 Feb 59 [9]p. 17 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15504

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1951, v. 77 [no. 1] p. 69-72.

Petrov, A. A.
THE COURSE OF THE ADDITION REACTION OF IODINE WITH DIVINYL. [1959] 4p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15347

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1950, v. 72, no. 3, p. 515-517.

Schwarz, Robert and Schmeisser, Martin.
CONTRIBUTIONS TO THE CHEMISTRY OF GERMANIUM. REPT. XVI. PHENYLGERMANIUM. [1959] [14]p. 7 refs.
Order from SLA mi$2.40, ph$3.30 59-15079

Trans. of Chemische Ber[ichte] (Germany) 1936, v. 69 [no. 1] p. 579-585.

Sella, C. and Trillat, J.-J.
PERIODIC STRUCTURES IN POLYETHYLENES. [1959] 3p.
Order from ATS $5.60 ATS-41L30F

Trans. of [Academie des Sciences, Paris] Compt[es] Rend[us] (France) 1959, v. 248, p. 410-413.

Skrabal, A[nton] and Zlatewa, M[aria].
ON THE SPEED OF SAPONIFICATION OF TETRA-ACETYL-PENTA-ERYTHRITE. [1959] 17p. 61 refs.
Order from SLA mi$2.40, ph$3.30 59-10740

Trans. of Monatsh[e]fte für Chemie (Austria) 1926, v. 47, p. 39-56.

Tetra-acetyl-penta-erythrite in aqueous solution at 25°C was subjected to acid and alkaline saponification and the simple course of the reaction was observed in both saponifications. The group-velocity was influenced by spacial filling, acid, heaping up, and symmetry. The group velocity increases as the heaping up of the reactive groups in the molecules increases, and decreases as the saponifying molecules show larger spacial fillings and a higher degree of symmetry. The stronger the acid character of the ester components (acid component and alcohol component) the more rapid does the saponification take place. Alkaline saponification of the ester anions was relatively slow because of the influence of the acid. These four influences compensate one another in their effects and therefore lead, especially with the

esters of the alcohols with identical groups (ethylene glycol and penta-erythrite) to the approximate equality of the group velocities and thereby to the simple course of the reaction. Any "replacement-esterification reactions" can act only in the sense of bringing about the simple course of the reaction.

Strepikheyev, A. A., Skuratov, S. M. and others.
THE STRAIN IN LACTAMS. [1959] 6p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15311

Trans. of Akad[emiya] Nauk SSSR. Dokl[ady] 1955, v. 102, no. 1, p. 105-108.

The magnitude of the "strain" of the cycle for 3 to 9 membered lactams is measured. This is accomplished by the comparison of the combustion heats of the monomeric cyclic combination and the corresponding polymer. Results are given for α -pyrolidone, ε-caprolactam, and others. The strain increases with the increase of the amount of members in the cycle. The results contradict the Bayer and Sachse-Moore theory but confirm the opinion of Shtoll and Carothers about the appearance of a different type strain in the zone of 7 to 14 membered rings, caused by spatial difficulties in distribution of the hydrogen atoms in the inner area of the cycle.

Takahashi, Akira and Yamazaki, Isamu.
ANOMALIES CAUSED BY RESINS PREPARED BY THE STRONG-ALKALI CATALYZED METHOD, IN IODOMETRIC ANALYSIS. Rept. no. 2 on Studies on the Melamine-Formaldehyde Resins. [1958] 16p. 6 refs.
Order from SLA mi$2.40, ph$3.30 59-10507

Trans. of Kobunshi Kagaku (Japan) 1958, v. 15, no. 156, p. 232-237.

The condensation products of melamine and formaldehyde in the strong-alkaline media have the very different constituents and the characteristics from the resin prepared in the acidic solution. Anomalies for iodimetric analysis of the alkali-catalyzed products were studied. It was confirmed that the anomalies were attributable to the hydrolysis of the dimethylene ether linkage with alkali. Modified procedures of iodimetric method were investigated for the analysis of the methylol and dimethylene ether groups in the resin.

Wittig, Georg, Keicher, Georg and others.
BORON ALKALI METAL ORGANIC COMPLEXES, tr. by K. H. Sterner. 12 July 57, 17p. 20 refs. Pa-208.
Order from SLA mi$2.40, ph$3.30 59-10013

Trans. of [Justus Liebigs] Annalen [der Chemie] (Germany) 1949, v. 563 [no. 1/2] p. 110-126.

Wittig, Georg and Keicher, Georg.
METAL ORGANIC COMPLEX COMPOUNDS, tr. by K. H. Sterner. [1958] 2p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-10022

Trans. of [Die] Naturwissenschaften (Germany) 1947, v. 34 [no. 7] p. 216.

Organolithiums react with other organometals to form coordination compounds which are colorless, ether soluble and stable in the aluminum-beryllium series, especially when B and Al are the central atoms. The reaction can be followed by titrametric use of Michler's ketone reagent since the phenyllithium in the reaction loses its reactivity to benzophenones due to inactivation of the electron couplet in the anionic phenyl which is tied up by the central Al or B atom.

Yamasaki, Taro.
ON THE FORMATION OF O, O-DIALKYL HYDROGEN PHOSPHONOTHIOATES ($(RO)_2P(S)S$), AND ON SEVERAL OF THEIR PROPERTIES. [1959] 14p. 12 refs.
Order from SLA mi$2.40, ph$3.30 59-10491

Trans. of Nihon Kagaku Zasshi (Japan) 1958, v. 79, no. 7, p. 832-836.

By reactions between dialkyl phosphonates ($(RO)_2P(O)H$) and phosphorus pentasulfide, dialkyl thiophosphonates ($(RO)_2P(S)H$) were synthesized. These compounds react with chlorine to form dialkyl thiophosphate chlorides ($(RO)_2P(S)Cl$), and their alkali salts react with sulfur to give dialkyl dithiophosphates ($(RO)_2P(S)SNa$). The nuclear magnetic absorption spectra were measured with regard to the protons, and absorptions similar to those of dialkyl phosphonates ($(RO)_2P(O)H$) were observed.

Physical Chemistry

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958 (Soviet Abstracts. Chemistry).
Order from OTS $1.00 each

Section B. Physical Chemistry.
No. 13, Abstracts 42232-42788, JPRS: 1433-N, 59-13387
No. 15, Abstracts 49263-49779, JPRS: 1515-N, 59-13466
No. 23, Abstracts 76242-76875, JPRS: 1456-N, 59-13405
No. 24, Abstracts 80213-80926, JPRS: 1367-N, 59-13307

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Boutillon, Gabriel.
CONTRIBUTION TO THE STUDY OF ABSORBED PHASES. [1958] [4]p. (1 fig. omitted). Tr57-49.
Order from SLA mi$1.80, ph$1.80 59-10659

Trans. of thesis, Contribution a l'Etude des Phases Adsorbées, Lyon U., 1955, 22 Oct, p. 47-49 and 105.

The absorptive characteristics of alumina are discussed. Results of experiments (not included) show that the hypothesis of a division of the compounds analyzed between the organic solution and aqueous

solution is to be rejected and it is concluded that the solutes of the orgainc phase always absorb at the water absorbed-organic solution interface.

D'Or, L., Heyns, J., and Momigny, J.
BEHAVIOR OF SOME DERIVATIVES OF NORMAL PENTANE UNDER ELECTRONIC IMPACT (Comportement de Quelques Derivés du Pentane Normal sous l'Impact Electronique). [1957] [15]p. 6 refs. Tr57-187.
Order from SLA mi$2.40, ph$3.30 59-10586

Trans. of Soc[iété] Chim[ique de] Belg[ique]. Bull[etin] 1957, v. 66 [no. 7/8] p. 512-524.

Danusso, F. and Sianesi, S.
STEREOSPECIFIC POLYMERIZATION OF STYRENE. II. CHARACTERISTICS OF THE CATALYST SYSTEM $TiCl_4$-$Al(C_2H_5)_3$. [1959] [18]p. 12 refs.
Order from SLA mi$2.40, ph$3.30 59-15514

Trans. of la Chimica e l'Industria (Italy) 1958, v. 40 [no. 6] p. 450-457.

Some characteristics of the catalysts that are obtained by reacting titanium tetrachloride with triethylaluminum, with regard to the polymerization of styrene, are examined. It was observed that the method of preparation of the catalyst has a unique and considerable influence on the stereoisomeric composition and on the yield of the polymer produced. The variation of the activity and selectivity of the catalysts obtained by varying the ratio of the two catalytic reagents and the temperature were studied.

Fal'kovskiy, V. B. and Kagan, M. Ya.
THE KINETICS OF THE HOMOGENEOUS DECOMPOSITION OF ACETONE TO KETENE IN THE PRESENCE OF WATER VAPOR. [1958] 13p. 27 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-10729

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1948, v. 22, no. 4, p. 445-455.

Grabovskiy, Z. R.
DISCUSSION: THE RELATIONS BETWEEN THE ENERGY OF ELECTRON EXCITATION AND THE ENERGY OF ELECTROREDUCTION OF AROMATIC MOLECULES [1959] 6p.
Order from ATS $7.85 ATS-00L32R

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1959, v. 33, no. 3, p. 728-731.

Kamogawa, Hiroyoshi.
ON THE GEL POINT IN THE CONDENSATION REACTION OF METHYLOLPOLYACRYLAMIDE. [1958] 11p. 12 refs.
Order from SLA mi$2.40, ph$3.30 59-10506

Trans. of Kōbunshi Kagaku (Japan) 1958, v. 15, no. 156, p. 238-242.

Kawahara, Kazuo, Ueda, Minoru and others.
INFLUENCE OF NON-NEWTONIAN VISCOSITY ON THE MOLECULAR WEIGHT-INTRINSIC VISCOSITY RELATIONSHIP OF HIGH POLYMER SOLUTIONS (POLYSTYRENE ~TOLUENE SOLUTIONS). [1959] 17p. 14 refs.
Order from SLA mi$2.40, ph$3.30 59-10492

Trans. of Nihon Kagaku Zasshi (Japan) 1958, v. 79, no. 7, p. 843-848.

The influence of non-Newtonian viscosity on the viscosities of toluene solutions of several groupings of high molecular weight polystyrene was measured with regard to several types of shearing stresses, τ, using a multi-globular viscometer. Changes in the intrinsic viscosity value due to τ were sought quantitatively, and from its relationship with the molecular weight, it was made clear that the molecular weight obtained from the viscosity equation, ($[\eta] = KM^a$) differed depending on τ when the molecular weight was over 1,500,000. By seeking the constants of the viscosity equation approximately as functions of τ an equation was obtained for the calculation of the molecular weight by taking non-Newtonian viscosity into consideration.

Kazarnovskiy, I. A., Raykhshtein, C. I., and Bykova, L. N.
STUDY OF THE MECHANISM OF THE SPONTANEOUS DECOMPOSITION OF POTASSIUM OZONIDE, USING A MAGNETIC METHOD. 3 Mar 59 [10]p. 7 refs
Order from LC or SLA mi$1.80, ph$1.80 59-15503

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 123 [no. 3] p. 475-478.

To determine the mechanism of KO_3 decomposition, magnetic measurements were carried out by the Gouy method. The divergence of the results from those predicted by the additivity rule indicate the intermediate formation of atomic oxygen. The amount of atomic oxygen at different stages was estimated. Results support the hypothesis that the induction period is characterized by the accumulation of defects in the crystal lattice of KO_3. It is possible that an analogous mechanism is also involved in the decomposition of other metal oxides, and also salts of oxy acids.

Kirillov, N. I.
THEORY OF EQUILIBRIUM CONCENTRATIONS IN A CONTINUOUSLY FLOWING SOLUTION AND ITS APPLICATION TO CONTINUOUS AND STANDARD REACTIONS OF VARIOUS CHEMICAL PROCESSES. [1959] [40]p.
Order from LC or SLA mi$3.30, ph$7.80 59-10542

Trans. of Zhurnal Prikladnoy Khimii (USSR) 1940, v. 13, no. 7, p. 978-1002.

General equations were derived from a theoretical examination of the continuous process with continuous flow of a solution through reaction tanks, using the general reaction of starting materials in the reaction vessels as an example. Analysis of the derived equations showed that equilibrium states occur in the continuous process after a certain finite time when the

change in concentration of the starting materials or of the reaction products becomes nearly negligible. Practical examples are given relating to the preparation of light-sensitive emulsions.

Krasilnikov, K. G., Kiselev, V. F., and Sysoyev, E. A.
ON THE QUESTION OF THE PROBLEM OF THE NATURE OF THE SURFACE OF DEHYDRATED SILICA GEL. [1959] 7p. 12 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15115

Trans. of *Akademiya Nauk SSSR. Doklady, 1957, v. 116, no. 6, p. 990-993.

Lovera, G.
IONIZATION BY VAPORIZATION. 28 Mar 59 [7]p. 20 refs. WA-1-7690.
Order from SLA mi$1.80, ph$1.80 59-15345

Trans. of Nuovo Cimento (Italy) 1938 [Ser. 8] v. 15, p. 377-383.

Lubarskiy, G. D., Yermakova, S. K., and Pshezhetskiy, S. Ya.
KINETICS OF THE HYDROGENATION OF BUTYLENE ON A CHROMIUM-ALUMINUM CATALYST. [1959] 12p. 11 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15484

Trans. of Zhurn[al] Fiz[icheskoy] Khim[ii] (USSR) 1957, v. 31, no. 7, p. 1492-1500.

The kinetics of hydrogenation of butylene on a chromia-alumina catalyst were investigated over the temperature range 220-400°. The reaction rate is described by the equation $W = KC_bC_H$, where C_b and C_H are the butylene and hydrogen concentrations. The apparent activation energy of the process $E = 10,000 \pm 1000$ cal/mole.

Meyer, Kurt and Bettesch, Annelies.
THE BEHAVIOR OF SOME ISOLOGUES OF AGFACOLOR IMAGE DYES IN AQUEOUS SOLUTION. [1958] [11]p. 2 refs.
Order from SLA mi$2.40, ph$3.30 59-10544

Trans. of Zeitschrift für Wissenschaftliche Photographie, Photophysik und Photochemie (East Germany) 1950, v. 45, no. 10/12, p. 226-233.

Nellensteyn, F. J.
THE REACTION OF GASEOUS HI WITH SULFUR-CONTAINING OIL DERIVATIVES AND WITH SOME ORGANIC COMPOUNDS, ESPECIALLY WITH THIOPHENE. [1959] 7p. 11 refs.
Order from SLA mi$1.80, ph$1.80 59-15224

Trans. of Chemisch Weekblad (Netherlands) 1927, v. 24 [no. 9] p. 102-105.

Palatnik, L. S. and Landau, A. I.
INVESTIGATION OF PROCESSES PROCEEDING WITH CHANGES IN THE NUMBER OF FREEDOMS IN MULTICOMPONENT HETEROGENEOUS SYSTEMS. I. [1959] 24p. 5 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-15060

Trans. of Zhurnal Fizicheskoy Khimii (USSR) 1955, v. 29 [no. 10] p. 1784-1803.

An analytical study of the K-L process, i.e., conversion of a K-variant thermodynamic system into an L-variant is described for the case when K and $L \geq 2$ and when part of the solid solutions and part of the pure components either have just disappeared or just appeared during the K - L conversion. A basic system of equations is derived which defines the given K - L conversion. The study of K - L processes can be easily generalized for the case when, during the K - L conversion, part of the pure components and part of the solid solutions disappear, while part reappears again, and when K and L have any arbitrary values in the interval from zero to $n+1$. A "rule of selection" is derived, which permits a judgement about the possible change in the number of pure components and the quantity of solid solutions (or chemical compounds) in the thermodynamic system. A system of equations is obtained which defines the boundaries of the separation sections in the equilibrium diagram of a multicomponent thermodynamic system. The general relationships of these boundaries are explored and the rule of contiguous separation sections is proved, which expresses the dependence of dimensionality of the boundary between two separation sections on the difference between the number of pure components and the number of solid solutions in the given separation section. The relation of the boundaries between separation sections to hyperconoids of these sections was studied. (A hyperconoid (Doklady Akad. Nauk. SSSR 102: 125, 1955) represents a simplex or complex of the equilibrium diagram, whose vertices correspond to phases which are in a state of equilibrium).

Reimer, L[udwig].
MAGNETIC PROPERTIES OF THIN NICKEL AND IRON LAYERS DEPOSITED ELECTROLYTICALLY AND BY EVAPORATION. [1958] 22p. 16 refs.
Order from SLA mi$2.70, ph$4.80 59-10944

Trans. of Z[eitschrift für] Naturforsch[un]g (West Germany) 1957, v. 12a [no. 7] p. 550-557.

Rozen, A. M. and Khorkhorina, L. P.
ON THE THERMODYNAMICS OF EXTRACTION WITH TRIBUTYLPHOSPHATE, tr. by V. Beak, June 58 [22]p. AERE Lib/Trans 792.
Order from LC or SLA mi$2.70, ph$4.80 59-10080

Trans. of Zhurnal Neorganicheskoy Khimii (USSR) 1957, v. 2, no. 8, p. 1956-1969.

A thermodynamic interpretation is presented of previous experimental data (Zhurnal Neorganicheskoy Khimii USSR 2: no. 6, 1957) on the separate and combined distribution of nitric acid and uranyl nitrate between an aqueous solution and TBP with a diluent. An

interpretation is also given of data from the literature (H.A.C. McKay, Khimiya yadernogo goryuchego [The chemistry of nuclear fuel], p 499, GONTI [State United Sci.-Tech. Press], 1956) on the distribution of a number of actinide elements in tracer concentrations. The calculated mean values of the distribution constant, $\bar{K}_u$, were 30, 51, 53, 63, 68 and 79 respectively, for 100%, 50%, 40%, 30%, 20% and 10% of TBP in the diluent. The increase of the constant is connected with the nonideality of the TBP-and-solvent solution, which in this case promotes extraction. Solvation does not completely account for the nonideality of solutions in the organic phase. With degrees of binding of TBP up to 90%, the solution of the solvate of uranyl nitrate in TBP is nearly regular. The solution of TBP with a diluent (hydrocarbons) is nonideal and is subject to the laws of regular solutions, $\lg \gamma_T \approx 0.3(1 - \varsigma)^2$, where ς is the concentration of TBP in the diluent. An examination of the dependence of uranyl nitrate distribution of TBP concentration shows that the law $a \sim \varsigma^2$ can be obeyed only approximately, and only with tracer concentrations (the deviation is connected with the nonideality of the TBP-diluent solution). With high concentrations of uranyl nitrate, the dependence of the distribution on the dilution of TBP approximates to linear. An equation is derived for calculating the combined distribution of uranyl nitrate and nitric acid.

Simchen, A. E.
NOTE ON THE ENERGETIC EXPONENTIAL, tr. by G. F. Rynders. [1959] [10]p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-10564

Trans. of Jour[nal] de Chim[ie] Phys[ique] (France) 1958, v. 55, no. 1, p. 5-8.

Surface properties in the system of triangular coordinates are studied in which the surface is represented by the energetic exponential $\mu = (-E/at)$, both for positive and negative values of energy. Projections, i.e., isothermal curves, isoenergy curves and the center of maximum curvature, are indicated on the plane of coordinates. The isoenergy curves have inflection points whose loci are situated on a straight line parallel to the plane E, T. One point passes through the u axis at a distance from the origin equal to $1/e^2$. Thus the surface u(E, T) is generated by a straight line normal to u axis and leaving from the position +T and from there towards a position parallel to the axis-E. The absolute values of the function u approach unity at 0(+ or -) and at elevated temperatures. For the origin (0, 0) and for the point at infinity, the function u does not have a definite value.

Skripnik, E. I., Isagulyants, V. I. and Shtof, I. K.
THE THERMAL STABILITY OF SULFUR COMPOUNDS IN KUYBYSHEV OBLAST CRUDES. (O Termicheskoy Stabil'nosti Sernistykh Soyedineniy Neftey Kuybyshevskoy Oblasti). [1959] 13p. 29 refs. F-TS-9068/V.
Order from LC or SLA mi$2.40, ph$3.30 59-14256

Trans. of Khimiya [i] Tekhnologiya Topliv [i Masel] (USSR) 1956 [v. 1] no. 5, p. 1-7.

Slie, Pierre and Saeland, Einar.
CHEMICAL ACTION ON SOME ORGANIC IODIDES BY SEVERAL RADIATIONS AND THEIR EVENTUAL MEASUREMENT BY THE QUANTITY OF IODINE LIBERATED (Action Chimique, sur des Iodures Organiques, de Divers Rayonnements et leur Dosage Éventuel par la Quantité d'Iode Libérée). [1959] [8]p. (5 figs. omitted) 4 refs.
Order from SLA mi$1.80, ph$1.80 59-15316

Trans. of Société Chimique de France. Bulletin, 1949, no. 5/6, p. 437-439.

Tal'roze, V. L. and Frankevich, E. L.
INVESTIGATION OF THE ION-MOLECULE ELEMENTARY ACT OF THE RADIATION-CHEMICAL PROCESS. [1958] [9]p. 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-10664

Trans. of All-Union Conference on Radiation Chemistry (no. 1). Transactions (USSR) 1957, p. 13-18.

Tanaka, Ikuzo.
RECENT DEVELOPMENTS IN PHOTOCHEMISTRY. A DISCUSSION CENTERED ABOUT THE PHOTOCHEMISTRY OF THE VACUUM ULTRAVIOLET REGION. May 58, 25p. 40 refs. TR-T-57.
Order from SLA mi$2.70, ph$4.80 59-15088

Trans. of Kagaku (Japan) 1957, v. 27, no. 9, p. 541-456.

Terenin, A. N.
PHOTOCHEMISTRY OF DYES AND RELATED ORGANIC COMPOUNDS. CHAP. V, PHOTOCHEMICAL PROCESSES, tr. by M. E. W. 18 Mar 52, 25p. 52 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-10485

Trans. of mono. Fotokhimiya Krasiteley i Rodstvennykh Organicheskikh Soyedineniy, Moscow and Leningrad, 1947, chap. 5, p. 97-110.

Terenin, A. N.
PHOTOCHEMISTRY OF DYES [AND RELATED ORGANIC COMPOUNDS] CHAP. VII, PHOTOREACTIONS OF ADDITION OF MOLECULAR OXYGEN, tr. by M. E. W. 10 June 52, 91p. 232 refs.
Order from LC or SLA mi$5.40, ph$15.30 59-10486

Trans. of mono. [Fotokhimiya Krasiteley i Rodstvennykh Organicheskikh Soyedineniy, Moscow and Leningrad, 1947] chap. 7, p. 128-179.

Terenin [A. N.].
PHOTOCHEMISTRY OF DYES [AND RELATED ORGANIC COMPOUNDS] CHAP. VIII, PHOTOOXIDATION AND PHOTOREDUCTION, tr. by M. E. W. 19 June 52, 109p. 110 refs.
Order from LC or SLA mi$5.70, ph$16.80 59-10487

Trans. of [Fotokhimiya Krasiteley i Rodstvennykh Organicheskikh Soyedineniy, Moscow and Leningrad, 1947] chap. 8, p. 179-242.

[Terenin, A. N.]
[PHOTOCHEMISTRY OF DYES AND RELATED ORGANIC COMPOUNDS] CHAP. 11, PHOTOELECTROCHEMICAL EFFECTS OF DYES, tr. by M. E. W. 18 Mar 52, 32p. 112 refs.
Order from LC or SLA mi$3.00, ph$6.30 59-10488

Trans. of [Fotokhimiya Krasiteley i Rodstvennykh Organicheskikh Soyedineniy, Moscow and Leningrad, [1947] Chap. 11, p. 308-324.

Terenin, A. N.
SEPARATION OF ADSORBED GASES FROM METALS AND SEMI-CONDUCTORS, AND THEIR ADSORPTION UNDER THE ACTION OF LIGHT. [1958] [25]p. 54 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-10253

Trans of [Problemy Kinetiki i Kataliza] (USSR) 1955, v. 8, p. 17-33.

This general review which is based largely on work on the optics of surface phenomena at the Physics Institute of Leningrad University is divided under the following headings: photo-desorption, photo-sorption, photo-dissociation of the molecules of gas adsorbed by a solid body, and photo-decomposition of the adsorbent.

Tilenschi, Silviu.
COLOR REACTIONS OF ACETYLENE (Contributii la Reactiunile de Culoare ale Acetilenei). [1958] [5]p. 6 refs. Tr57-120.
Order from SLA mi$1.80, ph$1.80 59-10654

Trans. of Acad[emia] Rep[ublicii] Pop[ulare] Romine. Filiala Cluj. Studii Cercetari Stiint[ifice] (Rumania) 1952, v. 3, no. 3/4, p. 99-102.

Vinogradova, S. V. and Korshak, V. V.
THE KINETICS OF THE POLYCONDENSATION OF ACID CHLORIDES OF DICARBOXYLIC ACIDS WITH DIFUNCTIONAL PHENOLS. 26 Feb 59 [8]p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15509

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 123 [no. 5] p. 849-852.

The kinetics of polycondensation were studied for the reactions of isophthaloyl chloride and terephthalayl chloride with p,p'-dihydroxydiphenylpropane in the temperature range of 150 to 210°C and in a "dinil" solution. The change in the rate constants took place in accordance with Arrhenius equation and were dependent upon the diol used. The results indicate that the chain growth of the polymer, after 3 or 4 hr of reaction, is accomplished mainly as a result of the interactions of polymeric molecules.

Voyevodskiy, V. V., Molin, Yu. N., and Chibrikin, B. M.
SPECTRA OF ELECTRON PARAMAGNETIC RESONANCE OF Cr-AROMATIC COMPOUNDS WITH VARIOUS SUBSTITUTES. 3 Feb 59, 4p. (1 fig. omitted) 5 refs. JPRS: L-1454-D.
Order from OTS $0.50 59-11440

Trans. of Optika i Spektroskopiya (USSR) 1958, v. 5, [no. 1] p. 90-92.

Weitz, E[rnst] Franck, H[einz] and Schuchard, M[arianne].
SILICIC ACID AND SILICATES. [1959] 4p. 6 refs.
Order from SLA mi$1.80, ph$1.80 59-15709

Trans. of Chemiker Z[eitung] (East Germany) 1950, v. 74, no. 20, p. 256-257.

Yefimov, E. A. and Yerusalimchik, I. G.
INVESTIGATION OF THE CAPACITANCE OF A GERMANIUM ELECTRODE, tr. by Morris D. Friedman. 29 Apr 59, 10p. 7 refs. TE-11.
Order from LC or SLA mi$1.80, ph$1.80 59-16138

Trans. of Zh[urnal] Fiz[icheskoy] Khim[ii] (USSR) 1959, v. 33, no. 2, p. 441-446.

EARTH SCIENCES

GEODEZIYA I KARTOGRAFIYA (USSR) 1958 (Geodesy and Cartography). [1959].
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

No. 9, p. 3-79, PB 141 001T-9
No. 10, p. 3-80, PB 141 001T-8

Consists of abstracts in English.

Sen'ko, P. K.
UNUSUAL LOCALIZED CHARACTER OF MAGNETIC VARIATION IN THE MIRNY REGION. [1959] 2p.
Order from LC or SLA mi$1.80, ph$1.80 59-15220

Trans. of Informatsionnyi Byulleten' no. 1 of the Soviet Antarctic Expedition, Leningrad, 1958, p. 81-82.

Voronkov, P. P.
SOME REGULARITIES IN THE FORMATION OF THE CHEMICAL COMPOSITION OF ATMOSPHERIC PRECIPITATION. [1959] 5p. [1 table and refs. omitted].
Order from LC or SLA mi$1.80, ph$1.80 59-15448

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1954, v. 98, no. 5, p. 765-768.

Climatology and Meteorology

Brunner-Hagger, William.
RELATIONS BETWEEN SOLAR ACTIVITY, COSMIC RADIATION, METEOR STREAM AND THE PRECIPITATIONS OVER ZURICH. [1959] 2p.
Order from SLA mi$1.80, ph$1.80 59-10126

Trans. of unidentified mono.

Frenkel', Ya. I.
PHOTOCHEMICAL MECHANISM OF FORMATION OF CONDENSATION-NUCLEI IN THE TERRESTRIAL ATMOSPHERE. [1959] 2p. 1 ref.
Order from LC or SLA mi$1.80, ph$1.80 59-15573

Trans. of Akad[emiya] Nauk SSSR. Izv[estiya. Seriya Geofizicheskaya] 1953, no. 2, p. 191-192.

A hypothesis is advanced concerning the formation of water-vapor condensation-nuclei in the atmosphere, in which these nuclei are regarded as resulting from condensation, in the upper atmosphere, of certain gaseous substances of photochemical origin.

Shishkin, N. S.
STUDY OF SUMMER PRECIPITATIONS AND THE STORM ELECTRICITY FORMATION PROCESSES. [1959] 54p. (22 figs. 45 formulas omitted) 38 refs.
Order from LC or SLA mi$3.60, ph$9.30 59-15010

Trans. of Uspekhi Fizicheskikh Nauk (USSR) 1951, v. 45, no. 3, p. 313-356.

Geography

AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA GEOGRAFICHESKAYA (USSR) 1958, 1959 (News of the Academy of Sciences of the USSR. Geography Series). [1959]
Order from OTS $0.60, $3.50/year
Foreign $0.85, $5.00/year

1958, no. 6, p. 3-155, PB 141 004T-6
1959, no. 1, p. 3-160, PB 141 004T-7

Consists of abstracts in English.

Visser, W. C.
THE OBSERVATION OF GROUND-WATER LEVELS (De Waarneming van de Grondwater-standen). [1959] [10]p. Trans. no. 3072.
Order from SLA mi$1.80, ph$1.80 59-10827

Trans. of Landbouwkundig Tijdschrift (Netherlands) 1955, v. 67, p. 397-402.

The 1952-55 program for measuring ground water levels throughout the Netherlands is described. 24000 observation points were checked by 2000 volunteers. The resulting data are to be charted by the Netherlands Commission for Research on the Agricultural Water Economy.

Geology

*GEOKHIMIYA (USSR) 1958 (Geochemistry). [1959].
Order from OTS $0.60, $2.25/6 mo.
Foreign $0.85, $3.25/6 mo.

No. 6, p. 515-612, PB 141 002T-6
No. 7, p. 615-692, PB 141 002T-7

Consists of abstracts in English.

MOSKOVSKOYE OBSHCHESTVO ISPYTATELEY PRIRODY. BYULLETEN'. OTDEL GEOLOGICHESKIY (USSR) 1958 [V. 33(63)] (Bulletin of the Moscow Society of Naturalists, Geological Division). [1959].
Order from OTS $0.50, $3.00/year

No. 5, p. 3-160, PB 141 000T-6
No. 6, p. 3-163, PB 141 000T-5

Consists of abstracts in English.

Gnevushev, M. A.
THE DIAMONDS OF W. YAKUTIA. Thesis. [1958] 2p. [GSC unedited trans. no. 5].
Order from LC or SLA mi$1.80, ph$1.80 59-10561

Trans. of *Referativnyy Zhurnal [Geologiya] (USSR) 1958, no. 11, Ref. 19590.

Characteristics of kimberlite pipes in West Yakutia are described. The size of Yakutian diamonds is from the finest grains to 10 or more carats: fine crystals and their fragments predominate. Only the abstract of the author's thesis is translated.

ENGINEERING

COMMITTEE FOR STEEP BEDS. MINUTES ON MEETING (NO. 35) HELD IN THE CONSOLIDATION PIT 6/1 IN GELSENKIRCHEN-SCHALKE ON JUNE 4, 1957. [1958] 11p. (3 figs. omitted).
Order from SLA mi$2.40, ph$3.30 59-10250

Trans. of notes on the Committee Meeting of the Steinkohlenbergbauverein (Hard Coal Mining Association) held in Gelsenkirchen-Schalke on 4 June 57.

A winding gear is described which is suitable for winding of persons by rope. The device consists of an endless chain with a 28 metric ton breaking load as a hoisting element, the chain being driven by a 14 HP motor. The driving station possesses a worm gearing with automatic blockage. The car runs over the chain system by means of rope grippers and has no backstop on its track. The reversing station can be raised by means of an hydraulic advancing cylinder with a force of compression of 3 metric tons and a length of stroke of 1100 mm. The winding gear had been in satisfactory operation for 2 mo at the time of the report. Hydraulic mining operations are briefly mentioned.

Alexandrov, N. A.
WHY THE USA IS STRAINING TO GET INTO OUTER SPACE, tr. by John R. Thomas. 26 Feb 59, 9p. T-112.
Order from LC or SLA mi$1.80, ph$1.80 59-10984

Trans from Sovetskiy Flot (USSR) 1958, 25 Dec.

"The United States of America is developing satellite vehicles and spaceships solely for purposes of military conquest."

Frey, K. and Söhle, H.
MODEL EXPERIMENTS WITH VARIOUS FORMS OF OTTER BOARDS. [1959] [10]p. 7 refs. A. C. S. L. L. Trans. no. 991.
Order from SLA mi$1.80, ph$1.80 59-15135

Trans. of Schiffbau, Schiffahrt und Hafenbau (Germany) 1934, v. 35, no. 4, p. 49-53.

Various models of otter boards (used in deep sea fishing to hold open the trawling nets) were evolved after experimentation and tested in full scale at sea. Theoretical considerations reveal that only high angles of attack are useful and that considerable transverse lift forces must be produced, whereas drag is of minor importance. The characteristics can be determined from polar curves obtained from model experiments. The theoretical and practical requirements are best fulfilled by the use of subdivided leading surfaces corresponding to the patented model Vd.

Maurer.
THE FIRST RESULTS OF HYDROMECHANICAL COAL MINING. [1958] 9p. (3 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-10291

Trans. of enclosure 2 to the Minutes of the Meeting of the Committee for Steep Beds (no. 35) held in the Consolidation Pit 6/1 [in Gelsenkirchen-Schalke] on 4 Jun 57.

An enthusiastic report is presented on experiments with hydromechanical coal mining in Gelsenkirchen (Westphalia). The best performance was achieved with a 4 mm nozzle, the gauge pressure in front of the nozzle being approximately 140 atm. Under these conditions 8.5 metric tons of soft to medium-hard coal were detached in 43 min by a 2 man crew, while with hard coal the time amounted to about 65 min, as compared to 190 min required for removal of coal by pneumatic pick and blasting. Water consumption was 0.6 m^3/ metric ton of detached soft coal and 0.8 to 1.0 m^3/metric ton of hard coal. Safety and ease of operation are significant factors. Hydromechanical mining is not feasible in clayey beds.

Protodyakonov, M. M.
CONFERENCE ON RESEARCH COORDINATION IN THE FIELD OF SPECIAL (PHYSICAL) METHODS FOR DISINTEGRATING ROCK. [1959] 3p.
Order from LC or SLA mi$1.80, ph$1.80 59-15282

Trans. of Ugol' (USSR) 1957 [no. 3] p. 45-46.

Means of disintegration to which reference is made include high frequency electrical and magnetic fields, high tension electrical sparks transmitted through water, ultrasound, gas jet burners, and super high-speed jet streams — alone, or in combination.

Aeronautical Engineering

IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY. AVIATSIONNAYA TEKHNIKA (USSR) 1958, NO. 3, P. 3-157 (News of Institutes of Higher Learning, Aeronautical Engineering). [1959] 1v. SOV-147-58-3-(1-18)/18.
Order from OTS $0.60, $2.25/year PB 141 401T-2
Foreign $0.85, $3.25/year

Consists of abstracts in English.

Schuler, M.
DISTURBANCES IN PENDULUM AND GYROSCOPIC INSTRUMENTS AS A RESULT OF ACCELERATION OF POWER CRAFT. [1959] 20p. 2 refs.
Order from SLA mi$2.40, ph$3.30 59-15222

Trans. of Physikalische Zeitschrift (Germany) 1923, v. 24 [no. 16] p. 344-350.

Chemical Engineering

KHIMICHESKAYA PROMYSHLENNOST' (USSR) 1958 (Chemical Industry). [1959].
Order from OTS $0.60, $2.25/6 mo.
Foreign $0.85, $3.25/6 mo.

No. 6, p. 325-388, PB 141 059T-7
No. 7, p. 389-452, PB 141 059T-8

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958 (Soviet Abstracts. Chemistry).
Order from OTS $1.00 each

Section H. Chemical Technology.
No. 11, Abstracts 38029-38315, JPRS: 1011-N, 59-11155
No. 12, Abstracts 40338-40698, JPRS: 989-N, 59-11182
No. 12, Abstracts 41384-41786, JPRS: 1019-N, 59-11184
No. 13, Abstracts 43552-44395, JPRS: 1436-N, 59-13390
No. 19, Abstracts 64669-65248, JPRS: 1032-N, 59-11188
No. 24, Abstracts 81823-82565, JPRS: 1643-N, 59-13570

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

REFERATIVNYY ZHURNAL. KHIMIYA (USSR) 1958, 1959 (Soviet Abstracts. Chemistry).
Order from OTS $1.00 each

Section H. Chemical Technology
Section I. High Molecular Chemistry
1958, no. 13, Abstracts 44470-45524, JPRS: 1491-N, 59-13431
1958, no. 23, Abstracts 78566-80112, JPRS: 1429-N, 59-13383
1959, no. 1, Abstracts 1503-3445, JPRS: 1606-N, 59-13541

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia.

Aizikovich, M. A. and Petrov, A. A.
CATALYTIC HYDROGENATION OF VINYL ETHYLENE OXIDES. II. HYDROGENATION OF CHLOROPRENE OXIDE. [1959] 6p.
Order from ATS $7.80 ATS-89L29R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1958, v. 28, no. 11, p. 3051-3055.

Aizikovich, M. A., Maretina, I. A. and Petrov, A. A.
CATALYTIC HYDROGENATION OF VINYL ETHYLENE OXIDES. I. HYDROGENATION OF DIVINYL OXIDE. [1959] 7p.
Order from ATS $8.85 ATS-88L29R

Trans. of *Zhur[nal] Obshchey Khim[ii] (USSR) 1958, v. 28, no. 11, p. 3046-3051.

Balandin, A. A., Neyman, M. B. and others.
INVESTIGATION OF THE PROCESS OF FORMATION OF CARBON DIOXIDE GAS IN THE PRODUCTION OF BUTADIENE FROM BUTANE-BUTYLENE MIXTURES. [1959] 4p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15235

Trans. of *Akad[emiya] Nauk SSSR. Otdel[eniye] Khim[icheskikh] Nauk. Izv[estiya] 1957, no. 3, p. 270-273.

Boyard, G.
APPLICATION OF FACTORIAL DESIGN TO INVESTIGATION OF ORE-DRESSING AT TOUISSIT, tr. by R. C. Murray. 1957, 21p. (3 tables omitted) 4 refs.
Order from SLA mi$2.70, ph$4.80 NP-tr-60

Trans. of Z[eitschrift für] Erzbergbau u[nd] Metallhüttenwesen (West Germany) 1955, v. 8, Beiheft, p. 221-228.

The principle of factor analysis is discussed in general terms, and as an example its practical application to a problem of flotation reagents is presented.

Herzog, Max.
DESIGN OF ARCH DAMS OF ANY SHAPE BY THE SHELL THEORY. [1959] 19p. 44 refs.
Order from SLA mi$2.40, ph$3.30 59-15063

Trans. of die Bautechnik (Germany) 1956, v. 33, no. 8, p. 268-273.

A brief review of known methods for the design of single-arch dams is followed by the determination of stress and deformation conditions as a result of water pressure and temperature changes in an arbitrarily developed, doubly curved shell of variable wall thichness as an approximation through integration of a system of two simultaneous partial differential equations of the fourth order with variable coefficients. The values in the solution for the two unknowns, normal displacement and stress function of the membrane forces, permit calculation of all other section- and displacement values. By assuming that certain parameters (wall thickness, development and curvature radii) are constant within the range of a shell element under consideration, the variable coefficients can be made constant in the two shell equations. A further simplification consists in splitting up the shell action into a membrane and plate effect. These theoretical investigations lead to the conclusions that arch dams should be designed to be as slender as possible.

Lapuk, B. B.
THERMAL TREATMENT OF PETROLEUM STRATA FOR AN INCREASE IN PETROLEUM RECOVERY. [1958] 12p. 4 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-10397

Trans. of Az[erbaydzhanskoye] Neftyanoye Khozyaystvo (USSR) 1939, no. 12, p. 10-15.

The problem of the utilization of thermal energy for recovery of petroleum is discussed in theoretical terms.

Maffezzoni, U. and Fragiacomo, M.
METHOD FOR THE DIRECT PRODUCTION OF ESTERS OF TEREPHTHALIC ACID FROM p-DIALKYLBENZENES AND ALIPHATIC ALCOHOLS. [1959] 5p.
Order from ATS $8.85 ATS-30L30F

Trans. of French patent 1,170,821, granted 29 Sep 58, pub. 19 Jan 59.

Maffezzoni, Umberto and Fragiacomo, Mario.
PROCESS FOR THE DIRECT PRODUCTION OF TEREPHTHALIC ACID ESTERS FROM p-DIALKYLBENZENES AND ALIPHATIC ALCOHOLS. [1959] 11p.
Order from LC or SLA mi$2.40, ph$3.30 59-15008

Trans. of Fr[ench] patent 1,170,821, by Montecatini [Societa Generale per l'Industria Mineraria e Chimica, Milan] applied for 10 Jan 57, granted 29 Sep 58, pub. 19 Jan 59. (Patent applied for in Italy in the name of the petitioner, 16 Jan 56).

Matulis, Yu. Yu. and Valentelis, L. Yu.
ON THE PROBLEM OF LUSTROUS COPPER ELECTROPLATING FROM SULFURIC ACID SOLUTIONS (K Voprosu Blestyashchikh Gal'vanopokrytiy Med'yu iz Sernokislykh Rastvorov). [1958] [27]p. 17 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-10466

Trans. of [Akademiya Nauk Litovskoy SSR, Vilna. Trudy. Seriya B, 1957, no. 3(11) p. 17-28].

Optimal conditions for lustrous copper electroplating with a lustre formative (thiocarbamide) were experimentally determined. The most effective agents for improving the quality of lustrous electroplating and increasing the adhesion to the base metal proved to be various organic compounds having in their structure one or more azo groups (e.g., n-benzene-sulfo-azo-naphthylamine and congo red). Although the most lustrous electroplating at room temperature was obtained by adding 0.062 to 0.124 gr/l of thiocarbamide to the usual sulfuric acid electrolyte, the plating was extremely brittle and the cohesion to the base metal was weak. The addition of 0.006 to 0.05 gr/l of congo red or 0.02 to 0.085 gr/l of n-benzenesulfo-azo-naphthylamine gave highly lustrous electroplating of good quality firmly bonded to the base metal. Tests showed that the added compounds bind the complex cations of thiocarbamide with copper into the form of neutral molecules, delaying their ionization, thus lowering the amount of thiocarbamide in the layer of electro precipitate.

Morette, A. and Gaudefroy, G.
ON THE SEPARATION AND DETERMINATION OF TETRAVALENT AND PENTAVALENT VANADIUM. [1959] 10p. 18 refs.
Order from SLA mi$1.80, ph$1.80 59-15658

Trans. of Soc[iété] Chim[ique de] France. Bull[etin] 1951, v. 18 [no. 1/2] p. 73-[76].

Öhman, Walter [Peter].
USE OF REDOX POTENTIAL MEASUREMENTS AS INDICATORS IN THE PREPARATION OF NITROGLYCERINE AND SIMILAR EXPLOSIVES. [1958] 17p. 42 refs.
Order from SLA mi$2.40, ph$3.30 59-10396

Trans. of Chemiker-Zeitung (East Germany) 1958, v. 82, no. 18, p. 651-656.

Linear equations are developed which relate the redox potential to the log of HNO_2-concentration over a large region of HNO_3-concentrations.

Okhlobystin, O. Yu. and Zakharkin, L. I.
ACTION OF ALUMINUM TRIALKYLS ON PHOSPHORUS TRICHLORIDE. [1958] 4p. 9 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-10801

Trans. of *Akad[emiya] Nauk [SSSR]. [Otdeleniye] Khim[icheskikh Nauk]. Izvestiya, 1958, no. 8, p. 1006-1008.

The interaction of aluminum trialkyls with phosphorus trichloride ($AlR_3 + PCl_3 \longrightarrow RPCl_2 + R_2PCl + R_3P$) was studied by means of reactions yielding ethyldichlorophosphine, n-propyldichlorophosphine, isopropyldichlorophosphine, and other dichlorophosphines. Conditions are established for the synthesis of alkyldichlorophosphines with PCl_3 and corresponding aluminum trialkyls as initial materials.

Petrow, A. A. and others.
METHOD OF TERMINATING TELOMERIZATION REACTIONS. [1959] 3p.
Order from LC or SLA mi$1.80, ph$1.80 59-15332

Trans. of Russian patent 111,490, granted 27 June 57, printed after 20 May 58 (Patent of Addition to Russian patent 106,608, 21 July 56).

Samuelson, Olof, Lundén, Lennart, and Schramm, Kerstin.
APPLICATIONS OF ION EXCHANGERS IN ANALYTICAL CHEMISTRY XXVII. SEPARATION OF METALS WITH ION EXCHANGERS IN THE FORM OF CITRATES. [1959] 6p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15168

Trans. of Z[eitschrift für] Anal[ytische] Chem[ie] (West Germany) 1953, v. 140, no. 5, p. 330-335.

Smidt, J., Hafner, W. and others.
CATALYTIC REACTIONS OF OLEFINS WITH PLATINUM-METAL COMPOUNDS. THE CONSORTIUM PROCESS FOR THE PREPARATION OF ACETALDEHYDE. [1959] 18p. 22 refs.
Order from SLA mi$2.40, ph$3.30 59-15333

Trans. of Angew[andte] Chem[ie] (West Germany) 1959, v. 71, p. 176-182.

A new approach to the catalytic oxidation of olefins by means of platinum metal compounds is reported.

With oxygen and oxygen carriers a continuous selective reaction is possible which leads to carbonyl compounds, evidently with intermediate formation of noble metal-olefins complexes. Oxidation is possible with other unsaturated compounds as well, and new preparative possibilities are opened. The method is a basis of promising technical procedures for the preparation of carbonyl compounds from lower olefins, particularly of acetaldehyde from ethylene.

Talbot, Jean, Albert, Philippe and Chaudron, Georges.
ON A VERY HIGH DEGREE OF PURIFICATION OF IRON BY THE ZONE MELTING METHOD. [1959] 5p. 4 refs.
Order from SLA mi$1.80, ph$1.80 59-15522

Trans. of Academie des Sciences [Paris]. Comptes Rendus, 1957, v. 244, no. 12, p. 1577-1579.

Tille, R. and Kirkpatrick, W.
RESEARCHES ON THE MAGNETIC SEPARATION OF ORES. [1958] 21p. (6 figs. omitted) NP-tr-59.
Order from SLA mi$2.70, ph$4.80 59-10769

Trans. of Z[eitschrift für Erzbergbau] u[nd] Metallhüttenw[esen] (West Germany) 1955, v. 8, Beiheft, p. 117-125.

The fundamental formulae are derived for the force which acts on a particle in a magnetic field, and the simplification of these formulae is given for the case of weakly magnetic ores. The researches carried out with the aid of a Frantz isodynamic separator are described, and the obtained magnetic parameters are adjusted for an industrial separator, using either a Cu or Al coil. The procedures of magnetic separation are of special importance with respect to such ores as wolframite, garnet, etc, and with the Frantz separator one can control the operation and performance of industrial models.

Civil Engineering

Beryushev, K. G.
PROBLEMS IN PLANNING AND BUILDING OF CITIES AND PROTECTION OF THE ATMOSPHERE IN BRITAIN. 6 May 59, 11p. (3 figs. omitted) 3 refs. JPRS: L-758-N.
Order from OTS $0.50 59-13452

Trans. of Gigiyena i Sanitariya (USSR) 1958, no. 7, p. 72-79.

Data are presented which were gathered by the 3-man Soviet delegation to the 1957 International Congress of the Royal Health Society of Great Britain in the city of Folkstone.

Dischinger, F.
SHELLS OF ROTATION WITH UNSYMMETRIC SHAPE AND LOADING. [1959] 20p. 10 refs.
Order from SLA mi$2.40, ph$3.30 59-15084

Trans. of der Bauingenieur (Germany) 1935 [v. 6] no. 35/36, p. 374-381.

Electrical and Electronic Engineering

*ELEKTRICHESTVO (USSR) 1958 (Electricity) [1959]
Order from OTS $0.80, $4.50/6 mo.
Foreign $1.05, $6.00/6 mo.

No. 10, p. 1-96, PB 141 098T-8
No. 11, p. 1-95, PB 141 098T-7

Consists of abstracts in English.

Altenkirch, Edmund.
THERMOELECTRIC REFRIGERATION AND REVERSIBLE ELECTRIC HEATING. [1959] 13p. 6 refs.
Order from SLA mi$2.40, ph$3.30 59-15221

Trans. of Physikalische Zeitschrift (Germany) 1911, v. 12 [no. 21] p. 920-924.

Gemant, A.
INVESTIGATIONS OF CONDENSER TRANSFORMER. [1959] 13p. (4 figs. 43 equations omitted).
Order from SLA mi$2.40, ph$3.30 59-15639

Trans. of Archiv für Elektrotechnik (Germany) 1930, v. 23, no. 6, p. 695-706.

Godin, H.
ON THE ADVANTAGE OF Pb-Sb-Cd-ALLOYS OVER PURE LEAD IN THE MANUFACTURE OF SHEATHS FOR ELECTRIC CABLES AND TELEPHONE CABLES. [1959] 7p. (1 fig omitted) 6 refs.
Order from SLA mi$1.80, ph$1.80 59-15636

Trans. of Revue Universelle des Mines (France) 1931, ser. 8, v. 5, p. 106-109.

Cracking of lead cable sheaths caused by repeated fagigue which the elastic limit of pure Pb cannot withstand can be prevented by use of a Pb-Sb alloy containing 1% Sb, or of a Pb-Sb-Cd alloy containing .25% Cd and .5% Sb. The Pb-Sb alloy is more economical. Facts are included to guide the buyer of commercial antimony, with charts of the composition of Chinese regulus and other products.

Herlet, Adolf.
DEPENDENCE OF THE CURRENT DENSITY OF A p-i-n (Ge or Si) RECTIFIER ON THE WIDTH OF ITS MIDDLE ZONE. [1959] [24]p. 10 refs.
Order from SLA mi$2.70, ph$4.80 59-10770

Trans. of Z[eitschrift für] Physik (Germany) 1955, v. 141, no. 3, p. 335-345.

An increase of current in a p-i-n rectifier with a decrease of the middle zone width is treated by assuming that the individual particle areas act almost as "current sources" when the half middle zone width is smaller than the diffusion length of the current carrier in the intrinsic zone. For $d > L$ the concept of the current path as a series connection of resistances is valid. For $d < L$, the total middle zone acts as an effective recombination volume and an increase of d is completely effective; while for $d > L$, the areas lying in the middle of the rectifier add practically nothing more to the recombination.

Katsenelenbaum, B. Z.
THE EFFECT OF A DIELECTRIC FILM ON THE ATTENUATION OF H_{01} WAVES IN A STRAIGHT NEARLY CIRCULAR WAVEGUIDE. [1958] 18p. 7 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-10880

Trans. of *Radiotekhnika i Elektronika (USSR) 1958 [v. 3] no. 1, p. 38-45.

The attenuation of H_{0m} waves is determined, which is caused by the deformation of waveguides with rectilinear axes, and which is additional to that which results from the deposition of a thin dielectric film. A circular waveguide, coated internally with a semiconducting layer having a dielectric coefficient $\xi = \xi' - i\xi''$, is considered. In the presence of a normal electric field component, E_n, the attenuation coefficient of the system is expressed by: $\beta = (k\delta\xi'')/|\xi|^2 \cdot (\oint |E_n|^2 ds)/(\mathrm{Re}\int [\vec{E}\vec{H}^*]_z ds)$, where $k = \omega/c$ and δ is the thickness of the film. The contour integral is expressed by: $(\mu^2/a) \sum_{n=2}^{\infty} f_n^2 l_n^2$, where l_n is determined by the nature of the deformation, $\mu = a_0$ a = 3.83 for H_{01} wave, $f_n = [n J_n(\mu)]/[\mu J_n'(\mu)]$, J_n being the Bessel function. This solution is used to determine the expression for the additional attenuation:

$$\beta = \beta_0 \frac{\mu^2}{2h^2} \sum_{n=2}^{\infty} f_n^2 l_n^2,$$

where h is the wave number and $\beta_0 = (2h\delta\xi'')/(a|\xi|^2)$. Additonal equations are found for waveguides subject to an elliptical deformation and numerical results are obtained. The expression for the additional attenuation can be extended to waveguides with appreciable deformations.

Nagaura, Shigeo, Kato, Eizo, and Yamano, Tsuneichiro.
ELECTROCHEMICAL PROPERTIES OF THE POSITIVE PLATE OF THE LEAD STORAGE BATTERY. [1959] 9p. 6 refs.
Order from SLA mi$1.80, ph$1.80 59-15241

Trans. of Kogyo Kagaku Zasshi (Japan) 1956, v. 59, no. 10, p. 1104-1106.

Rozenblatt, M. A.
TWO-CYCLE MAGNETIC AMPLIFIERS. [1958] 75p. 15 refs.
Order from MDF MDF R-117

Trans. of the book Magnitnye Usiliteli (Magnetic Amplifiers) Moscow, 1956, chap. 8, p. 412-510.

Topics discussed include (1) amplifiers with a carrier frequency output without feedback, (2) two-cycle power amplifiers, (3) a comparison of differential, bridge and transformer circuits, (4) the computation of 2-cycle amplifiers with ac output at a given (maximum) power, (5) the computation of a low-power, maximum gain, amplifier, (6) the vector diagram of a 2-cycle amplifier, (7) the use of positive feedback in 2-cycle amplifiers with ac output, (8) direct amplification of ac signals which vary with the frequency of the source, (9) the use of resonance phenomenon in 2-cycle amplifiers with ac output, (10) fundamental circuits of 2-cycle amplifiers with direct (rectified) current output, (11) the computation of 2-cycle amplifiers with dc output, and (12) 2-cycle magnetic amplifiers with irreversible feedback.

Samsonov, P. D. and Kuznetsova, N. G.
CONCERNING CERTAIN FACTORS THAT DETERMINE THE ELECTRICAL PROPERTIES OF THE LEAD ACCUMULATOR, tr. by M. E. W. [1958] [45]p. 20 refs.
Order from LC or SLA mi$3.30, ph$7.80 59-10133

Trans. of Zhurnal Prikladnoy Khimii (USSR) 1941, v. 14, p. 317-334.

A method was developed for determination of the volume porosity and pore structure of active accumulator pastes. A dependence was demonstrated between the volume porosity and pore structure of active accumulator pastes and the recipe of the accumulator pastes (compositions). The influence of the temperature condition of preparation of the paste on the pore structure of active pastes was shown. The hypothesis is expressed that the difference in the coefficients of utilization of active pastes with variation of the working conditions (strengths of the discharge current and temperatures) may be explained by the difference in pore structure. A new characteristic of active pulps, the true surface of the pores, is introduced. The difference in the coefficients of utilization of positive and negative active pastes with variation of the current strength and temperature may be explained on the basis of pore structure.

Sieber, Karl.
THE BRAIDING OF INSULATED WIRE (Uber die Beflechtung Isolierter Leitungen). [1959] [15]p. 2 refs. (foreign text included).
Order from SLA mi$2.40, ph$3.30 59-15186

Trans. of Verein Deutscher Ingenieure. Zeitschrift (Germany) 1930, v. 74, no. 51, p. 1735-1738.

The effect of the thickness of the braiding and its pitch upon the quality and cost is discussed. The purely empirical method of determing and judging the thickness of the braid and its pitch employed up to this time has been substituted by a new method based on mathematical calculations. Equations have been formulated and working charts set up for the adjustment of the machines and for accurate cost determination. The results of the equations are checked in experiments on the economy of various methods of braiding.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Ritter, P.
EFFECT OF THE HEATING OF ASEPTICALLY MILKED RAW MILK ON THE GROWTH OF THE MOST IMPORTANT LACTIC ACID BACTERIA AND ESCH. COLI (Einfluss der Erwarmung von Aseptisch Ermolkener Robmilch auf das Wachstum der Wichtigsten Milchsaurebakterienarten und Esch. Coli). [1959] [24]p. (7 figs. omitted) 16 refs.
Order from SLA mi$2.70, ph$4.80 59-15278

Trans. of Landw[irtschaftliches] Jahrb[uch der] Schweiz (Switzerland) 1945, v. 59, p. 915-927.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

Yakobson, V.
AUTOMATIC REGULATION OF THE PERFORMANCE OF REFRIGERATION COMPRESSORS (Avtomaticheskoye Regulirovaniye Proizvoditel'nosti Kholodil'nykh Kompressorov) tr. by M. Slade. 19 Sep 56 [17]p. 7 refs. Trans. no. 2895.
Order from LC or SLA mi$2.40, ph$3.30 59-15038

Trans. of Kholodil'naya Tekhnika (USSR) 1954, v. 31, no. 3, p. 27-34.

Various methods of regulating the output of compressors are discussed in theoretical terms. The start-stop method is the most expedient: it can in some cases be usefully supplemented by multispeed electric motors. The recommended types of machine for fully automatic refrigeration plants are vertical or U-shaped compressors driven by asynchronous squirrel-cage motors.

Engines and Propulsion Systems

Baldina, O. M.
STUDY OF THE HYDROMECHANICS OF SUSTAINING CYCLONES FOR STEAM BOILERS. Oct 57, 15p. (11 figs. omitted) 1 ref.
Order from LC or SLA mi$2.40, ph$3.30 NP-tr-65

Trans. of Energomashinostroyeniye (USSR) 1956 [v. 2] no. 10, p. 13-17.

Studies carried out on models and on full-scale boilers with multi-stage evaporation and sustaining cyclones indicate that with bottom-connected discharge pipes a vortex is formed which at high flows of water through the cyclones causes deep funnelling along the cyclone axes. Special baffles near the base are required in bottom-discharge cyclones to prevent funnelling. Parallel coupling of cyclones ensures normal running of a boiler system when there are pressure-balancing pipes between the water contents of the cyclones and the steam lead-off pipes.

Maksutova, M. K. and Zanadvorova, V. N.
INVESTIGATION OF THE EFFECTIVENESS OF SHORT TURBINE VANES (Issledovaniye Effektivnosti Korotkikh Turbinnykh Lopatok) tr. by M. E. W. [1959] [12]p. No. 8476.
Order from LC or SLA mi$2.40, ph$3.30 59-10923

Trans. of Teploenergetika (USSR) 1958, v. 5, no. 1, p. 31-33.

Manufacturing Equipment and Processes

PRIBOROSTROYENIYE (USSR) 1958, 1959 (Instrument Manufacture). [1959]
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

1958, no. 12, p. 1-31, PB 141 119T-10
*1959, no. 1, p. 1-33, PB 141 119T-11

Consists of abstracts in English.

Asada, Hiroshi, Koike, Kichizo and others.
INFLUENCE OF THE DIE SHAPE ON THE EXTRUSION PRESSURE. Rept. 2 on Studies on the Extrusion of Aluminum Alloys. [1959] 28p. 5 refs.
Order from SLA mi$2.70, ph$4.80 AEC-tr-3456, rept. 2

Trans. of Nihon Kinzoku Gakkai-Shi (Japan) [1957, v. 21, no. 3, p. 180-183].

The effect of the die-shape upon the extrusion pressure for aluminum alloys was examined and the following results were obtained: The extrusion pressure did not change by the variation of the shape of die-hole, while the circumference of hole was raised to 1.4 times. Both the dies of which the lead-in has a radius of curvature and the conical die decrease the

extrusion pressure in proportion to the increase of the radius of curvature and conicity. The pressure when using a multiplehole die was larger than that for the single hole die with the same total sectional area. The bearing length of the die gives only very small influence to the initial pressure, but larger influence to the secondary pressure which is caused by the friction effect. The secondary pressure rises to twice the initial pressure, when the bearing length becomes 5.8 times.

Asada, Hiroshi, Tanaka, Eihachiro and others.
ON THE PRESSURE OF EXTRUSION. Rept. 1 on Studies on the Extrusion of Aluminum Alloys. [1959] 14p. 4 refs.
Order from SLA mi$2.40, ph$3.30 AEC-tr-3456, rept. 1

Trans. of Nihon Kinzoku Gakkai-Shi (Japan) 1957, v. 21, no. 3, p. 176-183.

Extrusion pressure and the form of the pressure curve for wrought aluminum alloys were investigated by an automatic recorder on 300 ton extrusion press. Aluminum alloys have a strong tendency to adhere to the working tool and their deformation resistance varies delicately in accordance with cooling of the billet. Therefore the initial pressure has a linear relation with the logarithmic extrusion ratio, but the pressure curves for the extrusion by direct and inverted methods into rods or tubes do not show the ideal form. The influence of extrusion speed, temperature and soaking of billet on the extrusion pressure and the form of pressure curve were examined and discussed in connection of the results obtained. The values of resistance of extrusion at 450° for 2S, 3S, 63S, 53S, 61S, 17S, 24S and 52S were measured at 9.39-6.34, 9.86-9.28, 11.8-9.8, 12.9-9.78, 14.5-12.55, 20.7-16.86, 24.2-19, 25 and 23.1-20.95, respectively.

Irmann, R.
INFLUENCE OF SMALL AMOUNTS OF METALLIC ADDITIONS TO ALUMINUM CASTINGS. [1959] 10p. (5 figs. omitted) 12 refs.
Order SLA mi$2.40, ph$3.30 59-15074

Trans. of Aluminium (Germany) 1958, v. 34 [no. 3] p. [120]-130.

Reference is made to the effects of metallic sodium, phosphorus, beryllium, titanium and boron in this summary of a lecture before a foundrymen's meeting.

Shaykin, I. M., Telesov, S. A. and others.
LOW-ALLOY REINFORCING STEEL (Nizkolegirovannaya Armaturnaya Stal'). [1958] [9]p. 3 refs. C. T. S. no. 284.
Order from LC or SLA mi$1.80, ph$1.80 59-10316

Trans. of Stal' (USSR) 1956, v. 16, no. 2, p. 157-160.

A low-alloy reinforcing steel (type 25GS) of periodic profile for unstressed reinforced concrete constructions was developed which contains no elements in short supply. This steel contains 0.16-0.23% C, 1.2-1.6% Mn and 0.6-0.9% Si. Results of experimental melts are presented in tabular form, showing indices of mechanical properties. A saving of about 20% in metal can be achieved by use of 25GS, as compared to the standard steel 5, without lowering the strength of constructions. Rated yield strength is 45 kg/mm^2.

Steinitz, Otto.
EFFICIENCY LIMITS FOR SPEED OF OPERATION. [1959] 5p. [1 fig. formulae omitted]
Order from SLA mi$1.80, ph$1.80 59-15633

Trans. of Maschinenbau (Germany) 1930, v. 9, no. 16, p. 546-548.

Formulae are presented for the calculation of the most efficient working speed in relation to e.g. extent of possible speed-up of machinery, strength of materials, ability of the operator.

Wegner, Walter.
STATISTICAL PRODUCTION CONTROL AS AN AID IN PRODUCTION PLANNING (Statistische Fertigungskontrolle als Hilfsmittel der Arbeitsvorbereitung). [1959] [5]p. 1 ref. (foreign text included).
Order from SLA mi$1.80, ph$1.80 59-15231

Trans. of Maschinenbau (Germany) 1940, v. 19, no. 9, p. 395-396.

MATERIALS

Stäger, H.
AGING OF MATERIALS. [1959] 11p. (18 figs. 1 table and 2 formulae omitted).
Order from SLA mi$2.40, ph$3.30 59-15303

Trans. of Schweizer Archiv [für Angewandte Wissenschaft und Technik] (Switzerland) 1937, v. 3 [no. 6] p. 147-157.

Phenomena accompanying fatigue in metals, oils, plastic materials, rubber etc. are equated with the phenomena of aging in biological systems.

Adhesives and Sealants

Eich, T.
ACRYLIC RESINS IN THE PAINT AND ADHESIVES INDUSTRIES. [1959] 4p. (3 figs. omitted) 6 refs.
Order from SLA mi$1.80, ph$1.80 59-15664

Trans. of Farbe und Lack (West Germany) 1958, [v. 64] no. 3, p. 107-108.

Guyot, R.
THE ADHESION OF RUBBER TO TEXTILES. [1959] 18p.
Order from SLA mi$2.40, ph$3.30 59-15519

Trans. of Revue Generale du Caoutchouc (France) 1958, v. 35, no. 11, p. 1349-1354.

Methods of measuring adhesion in rubber-textile composites at rest and in actual use are described and evaluated. Procedures utilized for increasing the adhesion of rubber to textiles are discussed, including isocyanate impregnation, and the depositing of an intermediate layer which will adhere simultaneously to rubber and textile (e.g. emulsions based on proteins and lates, emulsions of rubber in the dispersed state and of casein or synthetic resins). Textile characteristics and their effect on rubber adhesion are reviewed.

Khrulev, V. M.
TESTING THE DURABILITY OF PLYWOOD (Ob Ispytanii Dolgovechnosti Kleyenoy Fanery) tr. by M. Slade. [1959] 8p. Trans. no. 4038.
Order from LC or SLA mi$1.80, ph$1.80 59-15322

Trans. of [Derevoobrabatyvayushchaya Promyshlennost'] (USSR) 1958, v. 7, no. 1, p. 4-7.

This paper relates to extensive studies of the behavior of various gluing compounds under different temperature and humidity conditions. Results indicate that plywood glued with resin glues is resistant to the action of atmospheric conditions and withstands well the action of prolonged soaking. Urea-formaldehyde resin showed increased gluing strength after soaking and after prolonged storage in high atmospheric humidity. Carbamide resins withstand the action of low temperatures (-40° C) but their gluing strength begins to decrease in water at 60° C and they are completely destroyed at 80° C. Soaking in water at room temperature has no destructive effect on carbamide resins and must therefore not be taken as a condition in standard testing of gluing strength.

Ceramics and Refractories

OGNEUPORY (USSR) 1958 [V. 23] (Refractories). [1959]
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

No. 11, p. 481-528, PB 141 134T-12
No. 12, p. 529-571, PB 141 134T-11

Consists of abstracts in English.

Bezborodov, M. A. and Bobkova, N. M.
THERMAL EXPANSION OF CESIUM SILICATE GLASS. [1959] 4p. 5 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15627

Trans. of Akademiya Navuk BSSR, Minsk. Doklady, 1957, v. 1, no. 1, p. 13-16.

Glasses of Cs_2O-CaO-SiO_2 and Cs_2O-Na_2O-Al_2O_3-SiO_2 compositions were examined for the influence of the Cs_2O component on the thermal expansion. Thermal expansion increases with an increase of Cs_2O content; the effect is greater than for Li_2O, Na_2O or K_2O. The use of Cs_2O is recommended for manufacturing glasses with a high coefficient of thermal expansion which may be applicable in glass metal joints.

Golebiowska, W. and Pawlowska, H.
FORMULATION OF A METHOD FOR THE STUDY OF VIAL GLASS. [1959] 14p. 10 refs.
Order from SLA mi$2.40, ph$3.30 59-15327

Trans. of Przemysl Chemiczny (Poland) 1952, v. 8 [no. 6/7] p. 365-368.

Methods for investigating the chemical resistance of glass vials are described which would fulfill requirements of the pharmaceutical industry, permit classification of the glasses, and indicate changes in the glass due to chemical action of the pharmaceutical substance contained in the vial. The British standard method is considered suitable only for the testing of vials of extremely low quality glass. Modifications of this method are discussed. A new methyl red test is described.

Skanavi, G. I. and Kashtanova, A. M.
THE PRODUCTION OF SEMICONDUCTING CERAMICS BASED ON WO_3 AND A STUDY OF SOME OF THEIR ELECTRICAL AND THERMAL PROPERTIES (Polycheniye Poluprovodnikovoy Keramiki na Osnove WO_3 i Izcheniye ye ye Nekotorykh Elektricheskikh i Teplovykh Svoystv). [1958] [11]p. 12 refs. C. T. S. No. 300
Order from LC or SLA mi$2.40, ph$3.30 59-10140

Trans. of Zhurnal Tekhnicheskoy Fiziki (USSR) 1955, v. 25, no. 11, p. 1883-1892.

Specimens of fully sintered semiconducting ceramics based on WO_3 have been obtained. The results of electrical and thermoelectric measurements as well as of determinations of the thermal conductivity of these materials are reported.

Zwetsch, Artur.
DILATOMETRIC INVESTIGATIONS ON PORCELAIN PASTES. [1958] 10p. (1 table omitted) 4 refs.
Order from SLA mi$1.80, ph$1.80 59-10974

Partial trans. of Deutsche Keramische Gesellschaft. Berichte (West Germany) 1952, v. 29, no. 3, p. 73-77.

Fuels, Lubricants, and Hydraulic Fluids

Chertkov, Ya. B., Zrelov, V. N. and others.
THE EFFECT OF MERCAPTANS ON THE FORMATION OF INSOLUBLE SEDIMENT IN FUEL (Vliyaniye Merkaptanov na Obrazovaniye Nerastvorimogo v Toplive Osadka). [1958] [15]p. 7 refs.
Tr57-78.
Order from LC or SLA mi$2.40, ph$3.30 59-10662

Trans. of Khimiya i Tekhnologiya Topliv [i Masel] (USSR) 1956 [v. 1] no. 12, p. 47-53.

Courtel, R. and Alles, M.
A NEW ELECTRONIC PROGRAM CONTROL DEVICE FOR TEST BENCHES; THE IFP-PTT APPARATUS (Un Nouveau Dispositie Electronique de Commande a Programme pour Banc d'Essais: l'Appareil I. F. P. - P. T. T.). [1958] [26]p. 1 ref.
Tr57-141.
Order from SLA mi$2.70, ph$4.80 59-10814

Trans. of Revue de l'Institut Français du Pétrole [et Annales des Combustibles Liquides] (France) 1955, v. 10, no. 5, p. 487-499.

An electronic control device known as the IFP-PTT apparatus is described. The device is to be used on test benches for the reproduction of road tests of oil.

Kröger, C. and Gondermann, H.
AUTOIGNITION BEHAVIOR OF HYDROCARBON-AIR MIXTURES AND ITS RELATION TO KNOCKING BEHAVIOR. [1959] 27p.
Order from ATS $22.10 ATS-02L30G

Trans. of Brennstoff-Chem[ie] (West Germany) 1958, v. 39, no. 17/18, p. 257-268.

Mackowsky, M. Th.
STATUS OF THE INTERNATIONAL COMMITTEE ON COAL PETROGRAPHIC ANALYSIS, tr. by G. H. Cady and N. O. Frederiksen. [1958] [22]p.
Order from SLA mi$2.70, ph$4.80 59-10393

Trans. of rept. from International Congress of Coal Petrology (no. 1) [held at] Heerlen, Sep 58.

The work of the international committee in establishing standards for petrographic analysis of coal since its organization in 1953 is reviewed. It has been determined that maceral analysis of coal is possible with satisfactory accuracy, being easiest with the point counter. Analysis by microlithotypes presents difficulties because the distinction is based on a 5% assessment: the most promising method appears to be a combination of maceral analysis and analysis by microlithotypes. Analysis by rank offers no difficulties if the coals in the mixture are of very different rank. In other cases, embedding in pitch and/or the use of methylene iodide immersion may offer advantages.

Rachfal, Stanislaw.
FIGHTING OF THE PARAFFIN DEPOSITS. [1959] [16]p. 3 refs.
Order from SLA mi$2.40, ph$3.30 59-15580

Trans. of Nafta (Poland) 1956 [v. 12] no. 7-8, p. 186-191.

Leather and Textiles

Barth, Karl.
DYEING POSSIBILITIES FOR WOLCRYLON. [1959] 16p. 29 refs.
Order from SLA mi$2.40, ph$3.30 59-15258

Trans. of Deutsche Textiltechnik (East Germany) 1958, v. 8 [no. 3] p. 149-151.

Detailed instructions are given for the dyeing of the polyacrylonitrile fiber known as Wolcrylon type 2.

Beckman, W.
ON THE KINETICS OF DYEING POLYACRYLONITRILE FIBERS WITH BASIC DYESTUFFS. [1959] 25p. 4 refs.
Order from SLA mi$2.70, ph$4.80 59-15285

Trans. of Melliand Textilberichte (West Germany) 1958, v. 39 [no. 10] p. 1121-1126.

Bernardy, G. and Wirth, H.
A PROCESS FOR THE PRODUCTION OF COLOR EFFECTS IN POLYESTER DYEING. [1959] 26p. 10 refs.
Order from SLA mi$2.70, ph$4.80 59-15288

Trans. of Melliand Textilberichte (West Germany) 1958, v. 39 [no. 3] p. 292-297.

Champetier, Georges.
THE CHEMICAL CONSTITUTION AND THE TEXTILE PROPERTIES OF SYNTHETIC MACROPOLYMERS. [1959] 31p.
Order from SLA mi$3.00, ph$6.30 59-15315

Trans. of Teintex (France) 1956 [v. 21, no. 12] p. 955-973.

Points considered in this review include the influence of the degree of polymerization, crystallinity, nature of the hydrogen bonds, spacing of the polar groups, rigidity of the chains, copolymerization, and especially the bridging of linear textile macromolecules.

Compostella, Mario and Denti, Francesco.
PROCESS AND APPARATUS TO IMPROVE THE DIMENSIONAL STABILITY OF FIBERS OBTAINED FROM CRYSTALLIZABLE HIGH POLYMERS OF PROPYLENE. [1959] [8]p.
Order from LC or SLA mi$1.80, ph$1.80 59-15219

Trans. of Belgian patent 559, 298, 16 Jan 58, by Montecatini [Societa Generale per l'Industria Mineraria e Chimica, Milan]. Priority: Italian patent applications 10, 838, 17 July 56 and 851, 17 Jan 57.

Edelmann, Kurt.
THE RHEOLOGY OF HIGH POLYMER SOLUTIONS. PART 1. GENERAL PRINCIPLES. [1959] 7p. 12 refs.
Order from SLA mi$1.80, ph$1.80 59-15318

Trans. of Faserforschung und Textiltechnik (Germany) 1952 [v. 3, no. 9] p. 341-344.

Edelmann, Kurt.
THE RHEOLOGY OF SOLUTIONS OF HIGH POLYMERS. PART 3. STRUCTURAL VISCOSITY MEASUREMENTS ON SOLUTIONS OF POLYMERS FOR SYNTHETIC FIBERS. [1959] [17]p. 6 refs.
Order from SLA mi$2.40, ph$3.30 59-15317

Trans. of Faserforschung und Textiltechnik (Germany) 1952 [v. 3] no. 10, p. 412-417.

Edelmann, Kurt.
THE RHEOLOGY OF SOLUTIONS OF HIGH POLYMERS. PART 4. THE INFLUENCE OF POLYMOLECULARITY. [1959] 13p. 15 refs.
Order from SLA mi$2.40, ph$3.30 59-15319

Trans. of Faserforschung und Textiltechnik (Germany) 1954 [v. 5, no. 2] p. 59-64.

Fourné, F.
STRETCH YARN; OPTIMUM NUMBER OF TWISTS. [1959] 9p. 10 refs.
Order from SLA mi$1.80, ph$1.80 59-15289

Trans. of Melliand Textilberichte (West Germany) 1958, v. 39, no. 2, p. 135-136.

Hunyar, Andreas and Reichert, Hans.
THE POLYMERIZATION OF ACRYLONITRILE. II. ACRYLIC FIBERS. 29 Oct 54, 22p. 13 refs.
Order from SLA mi$2.70, ph$4.80 59-15510

Trans. of Faserforschung und Textiltechnik (Germany) 1954, v. 5, p. 1-8.

The polymerization of polyacrylonitrile can be effected without stirring or cooling so that the decrease in concentration of the redox system caused by polymerization in the polymer is compensated by the activation of the rest of the redox system resulting from an increase in temperature. The heat of reaction of the polymerization can be used to raise the temperature. It is possible to extend this type of polymerization to include other monomers. Because of the peculiarity of copolymerization it is possible to prepare copolymers by the above mentioned methods.

Scheller, Emil.
RECENT FINDINGS IN THE FIELD OF PEROXIDE BLEACHES (Neuere Erkentnisse auf dem Gebiete der Peroxydbleiche) tr. by Fred J. Allred. 6 Dec 56 [5]p. 1 ref.
Order from SLA mi$1.80, ph$1.80 59-10909

Trans. of Melliand Textilberichte (Germany) 1944, v. 25 [no. 7] p. 234-236.

Sokolov, M.
FABULOUS FIBERS (Skazochnye Volokna) tr. by Hutcheson. [1959] [5]p. (1 photo omitted). H-2792.
Order from OTS $0.50 59-11885

Trans. of Krasnaya Zvezda (USSR) 1958, 3 July, p. 4.

Visits by a representative of the journal Red Star to the Artificial Fiber Institute of the Academy of Sciences in Teltow, and to the Wilhelm Pieck Chemical Fiber Combine in Schwarza are described.

Stather, F., Lauffman, R., and Bau-Miau, T.
CONCERNING THE SOLUBILITY OF PLANT TANNIN EXTRACTS IN ORGANIC SOLVENTS AND MIXTURES OF THE LATTER WITH WATER AND THE TANNING ACTION OF SUCH TANNING EXTRACT SOLUTIONS (Uber die Loslichkeit Pflanzlicher Gerbextrakte in Organischen Lösungsmitteln und Gemischen Dieser mit Wasser und die Gerbende Wirkung Solcher Gerbextraktlosungen). [1959] [16]p. 12 refs.
Order from SLA mi$2.40, ph$3.30 59-15273

Trans. of Collegium (Germany) 1936. v. 790, p. 66ff.

Walter, R. and Ilg, H.
PRINTING AND PAD DYEING OF POLYESTER FABRICS. [1959] 23p. 5 refs.
Order from SLA mi$2.70, ph$4.80 59-15286

Trans. of Melliand Textilberichte (West Germany) 1957, v. 38, no. 9, p. 1039-1043.

This general review is based on developments at Cassella Farbwerke Mainkur. It includes a list of vat dyes which are fixed on polyester fiber in direct printing by the action of dry heat. Pad dyeings with vat dyes are described which result in faultless penetration, even with 6-ply fabrics of continuous fiber. A method of color discharge production on dispersion backgrounds worked out for polyacrylonitrile is described in which Astrazon dyes are printed with tin chloride. By another method which leads to white and colored discharges, the fabric is prepadded with tin chloride, dried and then overpadded with an Astrazon dye. Soluble concentrated Decrolin for white and a vat dye for color discharges are printed for discharging of the background. Color resists can be produced on Astrazon background by printing a dispersion dye with an addition of alkali to

the resist of the ground. A new process (straight resist style) permits the white and colored illumination of a vat dyed background. The application of Rapidecht and Rapidogen dyes as discharge grounds is discussed.

Würz, Albrecht.
NEW METHODS FOR THE CONTINUOUS AND SEMICONTINUOUS DYEING OF FABRICS OF POLYAMIDE AND POLYESTER FIBERS. [1959] 26p.
Order from SLA mi$2.70, ph$4.80 59-15313

Trans. of Melliand Textilberichte (West Germany) 1957, v. 38, no. 7, p. 777-783.

Two methods of continuous dyeing of polyamide and polyester fibers developed by the Badische Anilin und Soda Fabrik are described. In the "EKV" method, dyes are applied in a water-in-oil emulsion by a pad-dyeing process. The "Sesolvan NK" process involves thickened solutions of the same dyes, containing certain solvents and swelling agents.

Paints and Finishes

Reuter, A.
APPLICATION OF INFRA-RED SPECTROSCOPY TO VARNISH ANALYSIS AND VARNISH CHEMISTRY. 6 Apr 59, 8p. (18 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-15662

Trans. of Farbe und Lack (West Germany) 1959, v. 65 [no. 1] p. 25-36.

Ulbrich, K.
FIRE PROTECTIVE COATINGS. [1959] [5]p. [illus. omitted].
Order from SLA mi$1.80, ph$1.80 59-15673

Partial trans. of Farbe und Lack (West Germany) 1957, v. 63 [no. 4] p. 154-161.

This general survey includes a list of binders, together with an indication of their behavior in the presence of flame.

Ulbrich, K.
HIGHLY PIGMENTED ZINC DUST PAINTS IN THE PAINT ARTS. [1959] 9p. (9 figs. 11 refs. omitted).
Order from SLA mi$1.80, ph$1.80 59-15675

Partial trans. of Farbe und Lack (West Germany) 1957, v. 63 [no. 9] p. 435-[443].

Photographic Materials

Arnol'd, Ts. S.
AN EFFICIENT METHOD FOR PROCESSING MULTILAYER COLOR NEGATIVES. [1959] 14p. 5 refs. T-2909.
Order from LC or SLA mi$2.40, ph$3.30 59-15704

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 3, p. 182-190.

A study of the kinetics of post-development of color negatives in the NIKFI process depending upon the potassium bromide content in the developer and upon the temperature of the wash water indicates that the principle is more efficient than that of the ordinary process. Fog densities 1.5 to 2 times lower are obtained with a smaller number of operations, while other sensitometric characteristics of the film remain practically the same and the results obtained are more uniform.

Protas, I. R.
PLATES FOR VACUUM ULTRAVIOLET PHOTOGRAPHY. [1959] 5p. 8 refs. T-3012.
Order from LC or SLA mi$1.80, ph$1.80 59-15263

Trans. of Optika i Spektroskopiya (USSR) 1958, v. 4, no. 6, p. 803-805.

Shklover, F. Ya.
INVESTIGATIONS OF THE SPECTRAL SENSITIVITY OF PHOTOGRAPHIC COATINGS CONTAINING CHROMATES. [1959] 9p. (refs omitted) T-3000.
Order from LC or SLA mi$1.80, ph$1.80 59-15703

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 3, p. 191-196.

Spectral light-sensitivity of bichromated colloids, if the thickness of the hardened coating is small ($\leq 2\mu$), does not depend upon the type of the colloid used. Two maxima are observed on the light-sensitivity curve. One of these is in the near ultraviolet ($\lambda = 380$ mu) and the other in the far ultraviolet region of the spectrum. The dependence of the spectral light-sensitivity curves upon the thickness of the hardened coating can be explained by the characteristics of the absorption of radiation by the coating. The quantum output of the photochemical reaction remained constant for bichromated gelatin when it was exposed to ultraviolet radiation of $\lambda < 400$ mμ.

Solov'yev, S. M.
THE EFFECT OF GASEOUS OXYGEN ON PHOTOGRAPHIC EMULSIONS. II. REVERSIBILITY OF THE EFFECT OF OXYGEN ON PHOTOGRAPHIC EMULSIONS. [1959] 12p. 7 refs. T-2865.
Order from LC or SLA mi$2.40, ph$3.30 59-15027

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 1, p. 19-24.

Two series of samples of panchromatic film, exposed and unexposed, were stored in gaseous oxygen in an autoclave under 10 atm pressure and examined periodically. Oxygen has no effect on the latent image Sensitized films are more sensitive to the effect of

temperature than unsensitized films. The light sensitivity which decreases as a result of storage is restored either partially or completely after hypersensitization and evacuation of oxygen, but this reversibility decreases as a function of time.

Varshaver, G. G. and Titov, A. A.
MECHANISM OF FORMATION OF ACTIVE CENTERS AND THEIR ROLE IN THE PHOTOGRAPHIC PROCESS. [1959] 11p. 4 refs. T-2907.
Order from LC or SLA mi$2.40, ph$3.30 59-15590

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 3, p. 166-172.

The process of finishing of photographic emulsions has been compared with the processes of photolysis and development occurring under the conditions existing for single-layer photographic emulsions. The transformations occurring on the silver halide grain surfaces of the photographic emulsions at the initial stage of finishing differ substantially from these transformations which occur during photolysis and development. The formation of nuclei of centers distributed on the silver halide surface according to the laws of random and mutually independent distribution and the redox process of growing of centers localized on these nuclei, indicate that finishing is the initial stage of formation of active centers on a silver halide surface.

Zyuskin, N. M.
METHODS FOR INCREASING THE SHARPNESS OF POORLY VISIBLE DETAILS IN THE PHOTOGRAPHIC IMAGE. [1959] 5p. 3 refs. T-3002.
Order from LC or SLA mi$1.80, ph$1.80 59-15588

Trans. of Zhurnal Nauchnoy i Prikladnoy Fotografii i Kinematografii (USSR) 1958, v. 3, no. 3, p. 207-209.

The following methods can be used for increasing the sharpness of the detail in the photographic image: (1) Preparation of contour images by masking; and (2) producing the effect of flickering of the detail on the background.

Plastics

Eich, T. and Haarlammert, F.
ADHESIVE PROPERTIES OF SUBSTITUTED HIGH POLYMERS. [1959] 4p. (6 figs. 4 tables and refs. omitted).
Order from SLA mi$1.80, ph$1.80 59-15663

Trans. of Farbe und Lack (West Germany) 1956, v. 62 [no. 12] p. 581-583.

The literature of linear colloids is reviewed, with reference to the phenomenon of increasing adhesion of lacquer and plastic films to light metals as a function of the lengthening of the paraffin residue of the side chain.

Moyseyev, A. A. and Rogovin, Z. A.
A STUDY OF THE EFFECT OF THE CONDITIONS OF FORMATION ON THE PHYSICO-MECHANICAL PROPERTIES OF CELLULOSE ACETATE FILMS. [1958] 13p. 12 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-10728

Trans. of Zhurnal Prikladnoy Khimii (USSR) 1941, v. 14, no. 4/5, p. 579-586.

Seebach, Fritz.
INVESTIGATIONS OF PHENOL AND CRESOL RESINS. [1959] 3p. (formulas, 8 figs. omitted).
Order from SLA mi$1.80, ph$1.80 59-15645

Trans. of Kunststoffe (West Germany) 1937 [v. 27, no. 11] p. 287-290.

Thinius, Kurt and Schröder, Elisabeth.
THE ANALYTICAL CHEMISTRY OF PLASTICS. VI. IDENTIFICATION AND DETERMINATION OF POLYOLS. [1959] 4p. (2 figs. omitted) 3 refs.
Order from SLA mi$1.80, ph$1.80 59-15651

Partial trans. of Chemische Technik (East Germany) 1956, v. 8, no. 7, p. 395-401 (Sec. 2, p. 397-399 only).

Rubber and Elastomers

Boldyreva, I. I., Dolgoplosk, B. A. and others.
PREPARATION AND PROPERTIES OF SYNTHETIC CIS-POLYISOPRENE. [1959] [8]p. 11 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15233

Trans. of Khimicheskaya Nauka i Promyshlennost' (USSR) 1957, v. 2 [no. 3] p. 391-392.

The first experiments on the polymerization of isoprene with triethyl of aluminum and tetrachloride of titanium have shown that this process is very sensitive to oxygen, moisture and a series of other impurities. Some of them affect only the kinetics of polymerization and the length of macromolecules; other impurities show substantial effect on the structure of polymeric chains. The synthesized polyisoprene behaves as a natural rubber at a plant or rubber industry. The polymer rapidly forms, during rolling, a dense skin; it mixes well with ingredients. The surface of mixtures after treatment is smooth, shiny. The surface of extruded cord, pressed out through a micropress at speeds from hundredth parts of millimeter to several millimeters per second, remains smooth. Rubber mixtures from polyisoprene are characterized by high adhesiveness.

Buiko, G. N. [Shvarts, A. G., and Tumanova, A. I.]
TIRES OF SYNTHETIC POLYISOPRENE RUBBER (SKI). [1959] [21]p. 5 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-15623

Trans. of Kauchuk i Rezina (USSR) 1957, v. 16, no. 5, p. 1-11.

Dogadkin, B. A., Tarasova, Z. N. and others.
THE STRUCTURE AND PROPERTIES OF RADIATION-VULCANIZED RUBBERS. [1959] [19]p. 10 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15236

Trans. of *Kolloid[nyy] Zhur[nal] (USSR) 1958, v. 20, no. 3, p. 260-271.

An investigation was made of the structural features of radiation vulcanizates, their physio-chemical and technical properties, and the development of recipes and technological procedures for the application of ionizing irradiations to industrial vulcanization.

Ratner, S. B. and Melnikova, M. V.
WEARING AWAY OF RUBBER BY ABRASIVE CLOTH. [1959] [19]p. 15 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-15620

Trans. of Kauchuk i Rezina (USSR) 1958, v. 17, no. 8, p. 14-21.

In abrasion tests of rubber on an apparatus of the Grasseli type, a stable zone is observed which does not depend on clogging of the abrasive cloth, but which is characteristic of the abrasion process. Considerable bend of the rubber sample promotes a large angle of incidence between abrasive surface and rubber, which leads to increased pressure. The angle of incidence can be decreased by rounding of the shape of the working surface of the rubber sample. Tests should be conducted using an abrasive cloth which has been stabilized by preliminary abrasion of rubber.

Wood and Paper

A PROCESS OF COOKING WITH SODA AND SULFUR OF WOOD FOR THE EXTRACTION OF CELLULOSE, tr. by David R. Weiser. [1959] [7]p.
Order from SLA mi$1.80, ph$1.80 59-15117

Partial trans. of Papeterie (France) 1949 [v. 71, no. 12] p. 495-497.

Bosshard, Hans Heinrich.
ON THE ANISOTROPY OF WOOD SHRINKAGE (Über die Anisotropie der Holzschwindung) tr. by B. A. Fischer. [1959] [32]p. 31 refs. Trans. no. 3945.
Order from SLA mi$3.00, ph$6.30 59-15270

Trans. of Holz als Roh- und Werkstoff (West Germany) 1956, v. 14 [no. 8] p. 285-295.

Samples of Tsuga canadiensis, Pinus strobus, Quercus borealis and Tilia glabra were examined in cross, radial and tangential sections to determine the influence of microscopic and submicroscopic structure on shrinkage, especially on its anisotropy. The influence of the medullary ray system was found to be especially important. The middle lamella was found to be the main carrier of shrinkage in coniferous and deciduous woods. Shrinkage values are increased by partial delignification. Increase of shrinkage in the radial walls is greater than in the tangential walls.

Faulhaber, M. and Rosenberger, A.
EXPERIMENTS ON THE QUANTITATIVE DETERMINATION OF SYNTHETIC FIBERS IN PAPERS BY CHEMICAL MEANS, tr. by E. A. M. Thomson. [1958] 7p. 8 refs.
Order from SLA mi$1.80, ph$1.80 59-10441

Trans. of Wochenblatt [für Papierfabrikation] (West Germany) 1958, v. 86, no. 13, p. 589-[594].

The solvents used in textile analysis for the quantitative determination of synthetic fibres in textiles, viz. formic acid-$ZnCl_2$ and formic acid-$CaCl_2$, were tested for their suitability for the determination of the synthetic fibre content in paper. The investigation showed that formic acid $ZnCl_2$ was suitable to determine the synthetic fibre content in rag and rag-containing wool papers, as far as cellulose hydrate and polyamide fibres are concerned, with considerably greater accuracy and reproducibility than is possible with the evaluation or numerical methods. In the case of rag papers and rag-wool papers with a cellulose content formic acid-$CaCl_2$ is the better solvent or means of separation.

Fineman, Olle.
THE MOVEMENT OF CHIPS IN THE KAMYR CONTINUOUS DIGESTER. 9 Apr 59, 6p. [Multilingual introduction omitted].
Order from SLA mi$1.80, ph$1.80 59-15698

Trans. of Svensk Pappers-tidning (Sweden) 1957, v. 60, no. 11, p. 425-428.

Paths and speeds of chips through the digester were determined by observation of radioactive tracer chips.

Jayme, Georg and Neuschaffer, Karlheinz.
CADMIUM AMINE COMPLEX BASES AS CELLULOSE SOLVENTS. [1958] 16p. 16 refs.
Order from SLA mi$2.40, ph$3.30 59-10751

Trans. of Makromolekulare Chemie (Switzerland) 1957, v. 23, no. 1, p. 71-83.

Komarov, F. P.
BLEACHING OF CELLULOSE WITH PEROXIDES. 10 Oct 58, 8p.
Order from SLA mi$1.80, ph$1.80 59-10509

Trans. of Bumaz[hnaya] Prom[yshlennost'] (USSR) 1957 [v. 32] no. 3 [p. 2-5] and Industria della Carta (Italy) 1958, v. 12, no. 3, p. 25-29.

Meyer, H[eribert].
STUDY OF THE DETERMINATION OF WET SHEET RESISTANCE FACTOR DURING DEWATERING BY MEANS OF TABLE ROLLS. [1958] 9p. (7 figs. omitted) 6 refs.
Order from SLA mi$1.80, ph$1.80 59-10307

Trans. of Das Papier (West Germany) 1956, v. 10, no. 13/14, p. 295-300.

Rettori, A.
LOADING IN PAPER AND BOARD. [1959] 7p. 9 refs.
Order from SLA mi$1.80, ph$1.80 59-15518

Trans. of Papeterie (France) 1958, v. 80, no. 7, p. 492-496.

The use of fillers in paper and board manufacture is described in laymen's terms. Individual fillers which are mentioned include barium sulphate, aluminum silicate, magnesium silicate, diatomaceous earth, the titanium whites and titanium anhydride.

Thier, R.
SORTING OF PAPER ACCORDING TO MORDERN POINTS OF VIEW. Mar 59, 9p. (17 figs. omitted)
Order from SLA mi$1.80, ph$1.80 59-15629

Trans. of Das Papier (West Germany) 1958, v. 12, no. 19/20, p. 505-512.

A mechanical-optical-electronic sorting device for the quality control of paper is described. Two-sided scanning of the paper is possible at a high speed with accurate detection of very small defects.

Tishchenko, D. V.
THE CONDENSING ACTION OF ACID ON LIGNIN (Kislotnaya Kondensatsiya Lignina) tr. by M. Slade. 1958 [16]p. 43 refs. Trans. no. 3994.
Order from LC or SLA mi$2.40, ph$3.30 59-10268

Trans. of Bumazhnaya Promyshlennost' (USSR) 1957, v. 32, no. 12, p. 5-10.

MATHEMATICS

REFERATIVNYY ZHURNAL. MATEMATIKA (USSR) 1958, NO. 4, P. 1-161 (Journal of Abstracts, Mathematics). [1959] 1v. SOV-44-58-4-(2568-3411).
Order from OTS $1.00, $5.50/6 mo. PB 141 038T-1
Foreign $1.25, $7.00/6 mo.

Complete translations of those entries which were originally published in the USSR, excluding those abstracted elsewhere.

MECHANICS

REFERATIVNYY ZHURNAL. MEKHANIKA (USSR) 1958 (Journal of Abstracts, Mechanics). [1959].
Order from OTS $1.50, $8.00/6 mo.
Foreign $1.75, $9.50/6 mo.

No. 3, p. 4-140, Abstracts 2570-3612, PB 141 124T-8
No. 8, p. 1-146, Abstracts 8344-9429, PB 141 124T-9
No. 10, p. 1-167, Abstracts 10695-11958, PB 141 124T-10
No. 11, p. 1-243, Abstracts 11960-13727, PB 141 124T-11

Complete translations of those entries which were originally published in the USSR, excluding those abstracted elsewhere.

Vereshchagin, L. F.
SUPERPRESSURE HYDRAULIC COMPRESSOR. [1958] [13]p. (11 figs. omitted) 7 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-10788

Trans. of [Zhurnal Tekhnicheskoy Fiziki] (USSR) 1946, v. 16, no. 6, p. 669-680.

A continuously operating hydraulic compressor is described which operates at pressures up to 6000 atm, yielding 15 l/hr. The piston (6 mm diameter) is made of polished ball-bearing steel and encased in a double packing -- an upper "labyrinth" which is a system of alternating steel and leather rings, and a lower cylindrical section which is mounted in such a way that the pressure acts on its outer surface as well as on the ring-shaped space between it and the piston. When pressure is increased to 10000 atm, the normal tension in the cross-section of the piston is 11400 kg/sq cm. Seals made with red copper bushings and disk valves are satisfactory at this pressure. Research was done on the optimum idle air space and on the volumetric efficiency of the device.

Aerodynamics and Pneumatics

Dombrovskiy, G. A.
ON FREE STREAMLINE FLOW AT SUBSONIC VELOCITES ABOUT AN INFINITE LATTICE OF FLAT PLATES. [1959] 9p. 7 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15506

Trans. of Akademiya Nauk SSSR. Doklady, 1956, v. 111, no. 2, p. 312-[315].

An infinite lattice with period $le^{i\gamma}$ is constructed of flat plates of length L in the plane $Z=X+iY$. The problem of free streamline flow about such a lattice is considered and the equation $Q/\Gamma^2\rho^2 \tan(\alpha - \gamma)$ is obtained from which the equation for an incompressible flow is obtained directly. ($\rho^2 = 1$). Q and Γ are real constants gotten in the derivation, and $-\alpha$ is the argument of the real part of the complex velocity of the flow.

Malavard, Lucien.
ON A NEW TECHNIQUE IN EXPERIMENTAL CALCULATION BY MEANS OF RHEOELECTRIC ANALOGIES (Sur une Nouvelle Technique dans le Calcul Expérimental par Analogies Rhéoélectriques) tr. by S. Reiss. [1958] [22]p. 11 refs.
Order from SLA mi$2.70, ph$4.80 59-10338

Trans. of la Recherche Aeronautique (France) 1951, no. 20 [p. 61-67].

The advantages of using an electrically conducting paper called "Teledeltos"--as a substitute for, or in conjunction with the electric basin method--for the solving of boundary problems involving the solution of Laplace's equation and allied types are discussed. Examples are given in several fields, e.g. aerodynamics, and other uses for the method are suggested.

Parchomovsky, S. I.
ON THE IMPULSIVE REACTION ON A LATTICE OF PLATES WITH SYMMETRIC CAVITY FLOW. [1959] [9]p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15483

Trans. of *Prikladnaya Matematika i Mekhanika (USSR) 1958, v. 22, no. 4, p. 565-568.

A flat plate placed in a flow of an ideal fluid bounded by parallel walls is given a translational velocity opposed to the flow direction. The complex potential w of the impulsive flow is considered in terms of its boundary conditions. The total impulsive force from the fluid is analyzed in terms of certain complex parameters of w. The impact on a lattice of flat plates for discontinuous free streamline flow and on a plate in an unbounded flow with cavity are considered, with comparisons made to known values.

METALLURGY

KOKS I KHIMIYA (USSR) 1958, 1959 (Coke and Chemistry). [1959]
Order from OTS $0.50, $3.00/6 mo.
Foreign $0.75, $4.50/6 mo.

1958, no. 11, p. 3-63, PB 141 063T-11
1959, no. 2, p. 3-64, PB 141 063T-13
1959, no. 3, p. 3-64, PB 141 063T-12

Consists of abstracts in English.

NAUCHNYYE DOKLADY VYSSHEY SHKOLY. METALLURGIYA (USSR) 1958, NO. 1, P. 5-283 (Scientific Reports of Higher Schools, Metallurgy). [1959] 1v. SOV-163-58-1-(1-53)/53.
Order from OTS $0.90, $3.50/year PB 141 133T-2
Foreign $1.15, $4.50/year

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. METALLURGIYA (USSR) 1957 (Journal of Abstracts. Metallurgy) [1959]
Order from OTS $1.90, $10.00/6 mo.
Foreign $2.15, $11.50/6 mo.

No. 6, Abstracts 9297-11235, PB 141 140T-11
No. 10, Abstracts 18134-20571, PB 141 140T-12
No. 11, Abstracts 20635-22783, PB 141 140T-13

Complete translations of those entries which were originally published in the USSR, excluding those periodicals which have been separately abstracted.

Kieffer, R. and Sedlatschek, K.
URANIUM ALLOYS PRODUCED POWDER-METALLURGICALLY ACCORDING TO THE IMPREGNATION METHOD. [1959] [22]p. (27 figs. omitted) 11 refs.
Order from SLA mi$2.70, ph$4.80 59-10780

Trans. of Planseeberichte für Pulvermetallurgie (Austria) 1957, v. 5 [no. 3] p. 104-120.

Kurov, G. A.
PRODUCTION OF FILMS OF ALLOYS OF VARIABLE COMPOSITION. 1 Dec 58, 7p. 5 refs. TK-60.
Order from LC or SLA mi$1.80, ph$1.80 59-10298

Trans. of *Prib[ory] i Tekh[nika] Eksp[erimenta] (USSR) 1958, v. 3, no. 5, p. 99-101.

An apparatus is described which can produce alloy films of variable composition, of 40 to 50 μ thickness or greater and in which the equal-composition lines in the sample will be straight. The apparatus consists of three fundamental parts, e.g., a system to produce a high vacuum, an evaporator section and an electrical supply system.

Raether, H.
STUDY OF THE ELECTRONIC DIFFRACTION OF THE ORDER-DISORDER TRANSFORMATION IN THE $AuCu_3$ ALLOY, tr. by Dina Johnson. 16 Feb 59, 3p. 12 refs.
Order from SLA mi$1.80, ph$1.80 59-10743

Trans. of Acta Crystallographica (Denmark) 1951, v. 4, p. 70-71.

Ramdohr, Paul
THE MANGANESE ORES. 1 Mar 58 [44]p. 23 refs.
Order from SLA mi$3.30, ph$7.80 59-10482

Trans. of International Geological Congress (no. 20) [Mexico] 1956. Manganese Symposium, v. 1, p. 19-73.

Manganese ores, especially the oxides of the "Braunstein" group are described, with reference to chemical composition, crystal structure, polishing hardness, reflective properties, powder pattern, and effect of etching reagents.

Shestakov, S. N. and Karnov, M. Ya.
STRUCTURE AND PROPERTIES OF ALLOYS AFTER VIBRATIONAL DEFORMATION. [1958] 8p. (7 figs. omitted).
Order from LC or SLA mi$1.80, ph$1.80 59-10520

Trans. of Metallovedeniye i Obrabotka Metallov (USSR) 1958, no. 7, p. 36-38.
Another translation is available from HB $3.25 as HB-4281, Jan-Feb 59.

Parallel investigations were carried out on specimens of aluminum alloys and steel after deformation on a vibrational press, hydraulic press and mechanical stamping press. In the vibrational press, the billet heated to punching temperature or in cold condition was placed in a cavity of the punch and subjected to preliminary compression by a static force up to 100 tons and then to vibrational impacts up to 1250 impacts/min. The vibration method of deformation leads to a more uniform macro- and microstructure and a smaller grain size in alloys after recrystallization heating. Hardness is also distributed more uniformly. The vibration method lowers the specific pressures of deformation.

Structural Metallurgy and Corrosion

Berndt, Georg.
INFLUENCE OF CORROSIVE MEDIA ON THE INTERCRYSTALLINE CORROSION OF UNALLOYED STEEL (Der Einfluss des Angreifenden Mittels auf die Interkristalline Korrosion von Unlegiertem Stahl). [1959] [17]p. (3 figs. omitted) 16 refs.
Order from SLA mi$2.40, ph$3.30 59-15108

Trans. of Archiv fur das Eisenhüttenwesen (Germany) 1940, v. 14 [no. 2] p. 59-66.

Investigations of bent specimens of steel not resistant to alkali in various aqueous solutions show that intercrystalline corrosion (alkali embrittlement) of unalloyed steel is connected with the formation of a protective layer thereon. This protective film does not show uniform adherence at all points of a steel not resistant to alkalies, which may be attributed to the reaction between the oxide layer which has been developed and the material of the grain boundaries. As a result of a difference of osmotic pressure, the grain boundaries are ruptured, this difference of osmotic pressure being produced by salt deposition within the resulting film. Correspondingly, all precautions which make the film resistant, lead to an arrest or decrease of caustic embrittlement. Further, in all cases in which the unstable places on the film have been dissolved away, as the result of chlorides, caustic embrittlement is increased. Likewise, it is possible to decrease the intercrystalline attack by the application of negative and positive potentials. Furthermore, the surface treatment of steel has an essential influence on the occurrence of intercrystalline cracks. After cold deformation, highly polished specimens, in agreement with the protective layer theory, are far less liable to caustic embrittlement than specimens which have only been planed off. On the other hand, in cases where a solution does not lead to cracking due to alkali, in the case of planed specimens, previous polishing followed by deformation of the steel leads to intercrystalline corrosion. By the measurement of the potential, it is possible to obtain an explanation for the fact as to whether a certain solution will lead to intercrystalline attack in a certain steel. Alkali embrittlement may occur even with an extremely small degree of deformation. Previous plastic and elastic deformation is of significance in the occurrence of intercrystalline attack in certain salt solutions only to the extent that it accelerates the production of cracks. Its effect on the course of the reaction itself is still open to doubt.

Pollack, A.
PROTECTIVE COATINGS FOR LIGHT METALS. [1959] 9p. (1 fig. omitted) 36 refs. A. C. S. I. L. Trans. no. 1054.
Order from SLA mi$1.80, ph$1.80 59-15162

Trans. of Metall (West Germany) 1956, v. 10, pt. 11/12, p. 523-527.

Practices in Germany, Great Britain and the United States are surveyed. The most effective anti-corrosion process is considered to be that of lacquering in combination with pre-treatment leading to the formation of protective films. For economic reasons, chemical processes are preferred to the electrochemical methods. The Alodine process developed by F. A. Spruance of American Chemical Paint Company is cited as an efficient method.

Thyssen, H[enri] and Marechal, J[ean] R.
APPLICATION OF POTENTIOMETRIC METHODS TO THE STUDY AND PREDICTION OF CORROSION OF FERROUS ALLOYS. Analysis of thesis by Louis Guitton. [1959] 4p.
Order from SLA mi$1.80, ph$1.80 59-15637

Trans. of Revue Universelle des Mines (France) 1937, [ser. 8, v. 13, no. 7] p. 310-312.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

*ATOMNAYA ENERGIYA (USSR) 1958. (Atomic Energy). [1959]
Order from OTS $0.60, $3.50/6 mo.
Foreign $0.85, $5.00/6 mo.

1958, v. 5, no. 4, p. 393-495, PB 141 082T-9
1958, v. 5, no. 4, p. 501-600, PB 141 082T-10
1958, v. 5, no. 6, p. 605-675, PB 141 082T-11
1959, v. 6, no. 1, p. 5-108, PB 141 082T-12

Consists of abstracts in English.

Chudakov, A. Ye.
PHOTON RESEARCH CONDUCTED BY MEANS OF THE THIRD ARTIFICIAL EARTH-SATELLITE. [1959] [4]p.
Order from LC or SLA mi$1.80, ph$1.80 59-15280

Trans. of Priroda (USSR) 1958 [v. 47] no. 12, p. 88-90.

A description is given of the luminescense counter used to obtain data on photons at high altitudes and of the method of transmitting the data. A high-count region was found above 60°N which impeded the detection of the weak γ-radiation from the sun. An increased sensitivity of instrumentation is necessary.

Dzhelepov, B. S., Novosil'tseva, N. D., and Tishkin, P. A.
FORMATION OF Re^{188} IN THE IRRADIATION OF TUNGSTEN BY SLOW NEUTRONS. 2 Oct 58, 4p. (4 figs. omitted) 3 refs. JPRS(NY)-L-362.
Order from OTS $0.50 PB 141 260T

Trans. of Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1954, v. 18, no. 1, p. 76-78.

Elementary Particles

Cohen, René and Barloutaud, Roland.
NEUTRONICS: A STANDARD OF DENSITY FOR THERMAL NEUTRONS WHICH CAN BE REPRODUCED EASILY. [1959] 2p. 2 refs.
Order from SLA mi$1.80, ph$1.80 AEC-tr-3195

Trans. of [Academie des Sciences, Paris]. Comptes Rendus, 1954, v. 238 [no. 14, p. 2413-2414].

It is proposed that we adopt for thermal neutrons a standard of density that can be easily effected, which is cheap, reproducible to better than 1.5%, and which offers a simple solution to the problem of comparison of different local standards. The value of this density, expressed with the aid of absolute measurements made previously at Chatillon, is $(5.70 \pm 0.19) \cdot 10^{-3}$ n/cm^3.

Meshcheryakov, M. G. and Neganov, B. S.
PRODUCTION OF MESONS IN THE REACTION $p+p \rightarrow d+\pi^+$. [1959] 3p. 6 refs.
Order from CCT $5.00 CCT-1253TT

Trans. of [Akademiya Nauk SSSR. Doklady, 1954, v. 100, no. 4, p. 677-679].

The proton beam of the synchrocyclotron of the Institute for Nuclear Problems was used in a study of the angular distribution of π^+mesons at 657 Mev (the maximum energy of the proton beam used). The mesons were observed in the 30° to 90° interval as measured in the center-of-mass system. Present results combined with those obtained previously (59-16591) show that the total cross section is approximately doubled as the proton energy increases from 460 to 660 Mev; at the same time the angular distribution of mesons does not change significantly at large angles. The total cross section for the reaction increases rapidly from 460 to 600 Mev but thereafter remains essentially constant. At 660 Mev, just as at 460 Mev, the mesons are chiefly in p-states: the effect of meson emission in d-states is relatively small. The fact that the energy of the π^+mesons can increase by a factor of two without any appreciable effect on their angular distribution indicates either that the ratio between the contributions of the transitions $^1S_0 \rightarrow {}^3S_1$ and $^1D_2 \rightarrow {}^3S_1$ to the partial cross section for meson production in p-states remains constant over the total extent of the energy interval being considered or that a predominant role in the production of mesons in the p-states is played by one of the indicated transitions. It is to be expected that the basic contribution to p-state meson production is that of the transition $^1D_2 \rightarrow {}^3S_1$. If so, the evidence presented supports the hypothesis that the noncentral interaction in the $^1D_2$ state of the (p, p) system is resonant in character.

Meshcheryakov, M. G., Neganov, B. S. and others.
THE PRONOUNCED VARIATION IN THE CROSS SECTION FOR ELASTIC SCATTERING OF PROTONS BY PROTONS IN THE REGION 460-660 Mev. [1959] 3p. 11 refs.
Order from CCT $5.00 CCT-1246TT

Trans. of [Akademiya Nauk SSSR. Doklady, 1954, v. 99, no. 6, p. 959-961].

Differential (p,p) cross sections at 30° and 90° were obtained for 460- , 562- , 610- , 634- , 645- , and 657-Mev protons. The $\sigma(30°)/\sigma(90°)$ ratios for the above energies were 1.26 ± 0.15, 1.67 ± 0.15, 2.16 ± 0.15, 2.77 ± 0.20, 2.97 ± 0.25, and 3.20 ± 0.20, respectively. The strong energy dependence of $\sigma(90°)$ in the 560- to 660-Mev region indicates a resonance interaction between protons that manifests itself in short-range (p,p) collisions. The contributions of $p+p \rightarrow \pi^+ + n + p$, $\pi^+ + d$, or $\pi^0 + 2p$ reactions to the total cross section for (p,p) interactions increase from about 20% at 460 Mev to about 40% at 660 Mev. At the same time the total cross sections for elastic (p,p) scattering remains essentially constant.

Meshcheryakov, M. G., Neganov, B. S. and others.
THE REACTION $p+p \rightarrow d+\pi^+$AT 460 Mev. [1959] 4p. 10 refs.
Order from CCT $5.00 CCT-1252TT

Trans. of [Akademiya Nauk SSSR. Doklady, 1954, v. 100, no. 4, p. 673-676].

See 59-16592

Prokoshkin, Yu. D. and Tentyukova, G. N.
INVESTIGATION OF THE PROTON ENERGY SPECTRUM IN THE INTERNAL PHASOTRON BEAM. [1958] 11p. (7 figs. omitted) 5 refs.
Order from LC or SLA mi$2.40, ph$3.30 NP-tr-193

Trans. of Pribory i Tekhnika Eksperimenta (USSR) 1957, no. 2, p. 18-22.

A possible experimental determination of the energy spectrum of particles in the internal phasotron beam is discussed. A system of equally spaced thin metallic filaments are placed in a plane lying perpendicular to the beam to be activated by the particles moving toward the target. By establishing a relationship between the amplitude distribution of free radial particle oscillations and the activity of a filament induced by protons in the beam, an equation of the Fredholm class can be used to obtain the energy spectrum within certain limits.

Nuclear Engineering and Power

Khlebnikov, G. I. and Dergunov, E. P.
OBTAINING OF SOLID LAYERS OF URANIUM, NEPTUNIUM, PLUTONIUM AND AMERICIUM BY ELECTROLYTIC DEPOSITION (Polucheniye Prochnykh Solyev Urana, Neptuniya, Plutoniya i Ameritsia Metodom Electroliticheskogo Osazhdeniya) tr. by Lydia Venters. Nov 58 [4]p. 8 refs.
Order from LC or SLA mi$1.80, ph$1.80
AEC-tr-3497

Trans. of *Atomnaya Energiya (USSR) 1958, v. 4, no. 4, p. 376-377.

A technique is described for the preparation of tough thin layers of uranium, neptunium, plutonium, and americium to form targets used in nuclear apparatus, such as cyclotrons. Ammonium oxalate dissolved in water, and formic acid were used as complex forming agents in the electrolysis from aqueous solutions. An increase of the electrolyzing time up to 12 to 14 hr accelerated the formation of a dense and durable layer. The quality of the layer was improved when the cathode, anode, and electrolyzer were treated with alcohol, benzene or trichloroethylene to decrease them before the electrolysis. Thin layers were prepared using an electrolyte consisting of hydrochloric or nitric acid solution of americium in 0.2 M ammonium formate. Tougher layers were formed when the electrolyte with formic acid was used.

Mikhaylov, A. I.
PERSPECTIVES OF USING ATOMIC ENERGY IN GAS TURBINE CLOSED CYCLE APPARATUSES (Perspektivy Ispol'zovaniya Atomnoy Energii v Gazoturbinnykh Silovykh Ustanovkakh Zamknutogo Tsikla). 14 Nov 58 [20]p. 11 refs. (includes foreign text).
Order from LC or SLA mi$2.40, ph$3.30 AEC-tr-3470

Trans. of Akademiya Nauk SSSR. Otdeleniye Tekhnicheskikh Nauk. Izvestiya, 1958, no. 1, p. 113-119.

A comparative analysis is made of a double-contour sodium-cooled closed-cycle atomic gas turbine power plant with helium, nitrogen, or carbon dioxide as the operating substance. Attention is devoted mainly to heterogeneous reactors. The advantages and disadvantages are given of the various gases used with liquid metal in the heat exchange systems.

Taube, M.
PLUTONIUM DIOXIDE AS A NUCLEAR FUEL. [1959] 10p. (2 figs. omitted) 22 refs. NP-tr-105.
Order from SLA mi$1.80, ph$1.80 59-15169

Trans. of Nukleonika (Poland) 1957, v. 2, no. 3, p. 465-478.

PHYSICS

ABSORPTION OF RADIOWAVES IN THE IONOSPHERE ACCORDING TO RADIO OBSERVATIONS OF ARTIFICIAL EARTH SATELLITES. Soviet Bloc IGY Translation: Ionosphere Studies. 20 Jan 59, 21p. (12 figs. omitted) 10 refs. JPRS L-502-D.
Order from LC or SLA mi$2.70, ph$4.80 59-12938

Trans. of *Radiotekhnika i Elektronika (USSR) 1958, v. 3, no. 9, p. 1107-1121.

A method is described for determining absorption factors of radiowaves in the ionosphere based on data of electric field strength measurements conducted at comparator stations. Determination of the absorption of radiowaves in the entire mass of the F_2 layer, as well as in the two separate halves of this layer and in lower lying layers, was accomplished by comparing integral absorption factors at various satellite altitudes in relation to the electron concentration maximum in the F_2 layer. The magnitude of integral absorption in layer F_2, established on the basis of experimental data, agreed well with the calculated integral absorption for a so-called biparabolic layer with exponential extension. An examination of the field strength and of absorption factors at medium distances showed that a propagation of radiowaves takes place in this region by means of consecutive reflections from the F_2 layer and from the surface of the earth. At great distances, starting at 6,000 to 8,000 km, the field strength values were greater than the values calculated by the formula for ideal radio transmission. This fact indicates that, at great distances, electromagnetic energy was propagated due to the formation of ionospheric radiowaves, which resulted in the long reception range of satellite radio signals, which sometimes amounted to as much as 16,000 km.

*AKADEMIYA NAUK SSSR. IZVESTIYA. SERIYA FIZICHESKAYA, 1958, V. 22 (News of the Academy of Sciences of the USSR. Physics Series). [1959]
Order from OTS $0.80, $4.50/6 mo.
Foreign $1.05, $6.00/6 mo.

No. 10, p. 1159-1292, PB 141 041T-10
No. 11, p. 1294-1420, PB 141 041T-9

Consists of abstracts in English.

REFERATIVNYY ZHURNAL. FIZIKA (USSR) 1958, NO. 6, Abstracts 13155-14671 (Soviet Abstracts. Physics). 11 Dec 58, 48p. JPRS Trans. 1034-N.
Order from OTS $1.00 59-11190

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Section F. Magnetism
Section G. Electricity
Section H. Electronics
Section I. Radio Physics
Section J. Acoustics
Section K. Optics

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia, excluding the Soviet Union.

REFERATIVNYY ZHURNAL. FIZIKA (USSR) 1958, 1959 (Soviet Abstracts. Physics).
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Section C. Nuclear Physics
Section D. Atomic and Molecular Physics
Section E. Solid State Physics
Section F. Magnetism
Section G. Electricity
Section H. Electronics
Section I. Radio Physics
Section J. Acoustics
Section K. Optics
1958, no. 12, Abstracts 26688-28967, JPRS: 1432-N, 59-18386
1959, no. 1, Abstracts 139-2339, JPRS: 1549-N 59-13492

Complete translations of those entries which were originally published in the Sino-Soviet bloc and in Yugoslavia, excluding the Soviet Union.

*ZHURNAL TEKHNICHESKOY FIZIKI (USSR) 1958, V. 28 (Journal of Technical Physics). [1959]
Order from OTS $1.00, $5.50/6 mo.
Foreign $1.25, $7.00/6 mo.

No. 10, p. 2093-2354, PB 141 053T-11
No. 12, p. 2645-2741, PB 141 053T-12

Consists of abstracts in English.

Gamtsemlidze, G. A.
EXPERIMENTAL VERIFICATION OF LANDAU'S FORMULA FOR DETERMINING THE VISCOSITY COEFFICIENT OF LIQUIDS BY THE DAMPING OF THE TORSIONAL OSCILLATIONS OF A DISC. [1959] 4p. 6 refs.
Order from CCT $5.00 CCT-1255TT

Trans. of [Akademiya Nauk SSSR. Doklady, 1954, v. 100, no. 3, p. 441-444].

The Landau formula, first published in an investigation on the temperature dependence of the viscosity of the normal component of helium II by E. L. Andronikashvili (Zhur. Eksp. i Teoret. Fiz. 18: 5, 424, 1948) is

$$\eta = \frac{4I^2 (\gamma - \gamma_0)^2}{\pi^2 R^8 \rho} \frac{1}{\left(1 + \frac{2\lambda}{R} + \frac{2d}{R}\right)^2}$$

in which $\lambda = \sqrt{2\eta/\rho\omega}$ is the penetration depth and d is the thickness of the disk: the actual value of η is obtained by successive approximations. An experiment is reported which showed that the uncorrected value of η depends on the ratio λ/d and varies between the limits of 0.0101 and 0.0129 poise. After the correction is applied for the end surface, the value of the viscosity coefficient (within the limits of the error of the experiment: $\Delta\eta/\eta = 5\%$) is found to be independent of the ratio λ/d for a range of values from 0.44 to 2.23.

Electricity and Magnetism

Akhiyezer, A. I., Bar'yakhtar, V. G., and Kaganov, M. I.
ON THE QUESTION OF THE FERROMAGNETIC RESONANCE LINE WIDTH. 2 Apr 59, 4p. 10 refs. TA-25.
Order from LC or SLA mi$1.80, ph$1.80 59-14738

Trans. of *Fiz[ika] Met[allov] i Metall[ovedeniye] (USSR) 1958, v. 6, no. 5, p. 932-934.

The magnitude of ferromagnetic resonance line broadening, specified by exchange interaction, is estimated from simple physical considerations. The results obtained are generalized to the case of anomalous skin effect.

Néel, Louis.
SURFACE ANISOTROPY OF FERROMAGNETIC SUBSTANCES. [1959] 5p. 2 refs.
Order from SLA mi$1.80, ph$1.80 59-15521

Trans. of Academie des Sciences, Paris. Comptes Rendus, 1953, v. 237 [no. 14] p. 1468-1470.

Paramonov, N. A.
YEARLY VARIATION OF THE POTENTIAL GRADIENT OF ATMOSPHERIC ELECTRICITY. [1959] 2p.
Order from LC or SLA mi$1.80, ph$1.80 59-15447

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 71, no. 1, p. 39-40.

The yearly behavior of the potential gradient is plotted for the northern hemisphere, the southern hemisphere, and for the oceans of both hemispheres. The probable cause for the simultaneous variation for the whole world is said to be the yearly fluctuation in surface density of the earth's charge, the fluctuation being due to the uneven transfer of charge during thunderstorm activity and precipitation.

Zavoyskiy, E. K. and Fanchenko, S. D.
THE INVESTIGATION OF ULTRAFAST LIGHT PROCESSES. [1959] 3p. 3 refs.
Order from CCT $5.00 CCT-1251TT

Trans. of [Akademiya Nauk SSSR. Doklady, 1954, v. 100, no. 4, p. 661-664].

Transient electric sparks were studied by the image-deflection method (Research 2: 287, 1949 and Proc. Roy. Soc. London 204A; 27, 1950). A special electron-optical image converter (EIC) of suitable sensitivity was used with a UKV generator at wavelengths from 95 to 150 cm. The sparks were produced in the oscillating high-frequency discharges of a miniature Lebedev oscillator discharging in nitrogen at 10 to 30 atm or of a small condenser discharging in air at normal pressure. The swept-out image of the luminous spark column was then photographed. With the same electrical parameters in the oscillating discharge circuit, the spark in nitrogen at high pressure was considerably brighter than the spark in air at normal pressure, although the two sparks were comparable in duration. For a discharge in nitrogen at 10 atm, the size of the zone of intense illumination (obtained from the width of the trace) was found to be not greater than 10μ and the emission time of the excited atoms, molecules, or ions in this zone does not exceed 10^{-11} sec. This result is not in agreement with the idea (L. B. Loeb and M. J. Meek, Mechanism of the electric spark, Stanford Univ. Press, 1941) that the light of a spark discharge is emitted by an elementary radiator with an emission time of about 10^{-8} sec. The small observed emission time can be explained by interactions between the excited atoms, molecules, or ions and those which are not excited.

Molecular Physics and Spectroscopy

Collin, Jacques.
REMARKS ON THE DISSOCIATION OF NITROGEN-CONTAINING MOLECULES UNDER ELECTRON IMPACT (Remarques sur la Dissociation des Molécules Azotées sous l'Impact Eléctronique). [1958] [22]p. 19 refs. Tr57-50.
Order from SLA mi$2.70, ph$4.80 59-10550

Trans. of Soc[iété] Chim[ique de] Belg[ique]. Bull[etin] 1954, v. 63 [no. 11-12] p. 500-524.

Goldstein, E.
THE STUDY OF EMISSION SPECTRA OF SOLID AROMATIC SUBSTANCES BY MEANS OF THE ULTRAVIOLET FILTER (Uber die Untersuchung der Emissionsspektra Fester Aromatischer Substanzen mit dem Ultraviolettfilter). [1958] 11p. 24 refs. Tr57-4.
Order from SLA mi$2.40, ph$3.30 59-10638

Trans. of Physikalische Zeitschrift (Germany) 1911, v. 12, p. 614-620.

Gringauz, L. I. and Lerman, G. M.
METHOD OF SPECTRUM ANALYSIS IN USE FOR THE DETERMINATION OF CALCIUM, SODIUM, POTASSIUM, AND STRONTIUM IN THE PRODUCTION OF RARE ELEMENTS. [1958] [26]p. 7 refs. (includes foreign text).
Order from LC or SLA mi$2.70, ph$4.80 59-10458

Trans. of Zavodskaya Lab[oratoriya] (USSR) 1938, v. 7, p. 314-321.

Kostarev, A. I.
THEORY OF THE FINE STRUCTURE OF ABSORPTION LINES OF X-RAY SPECTRA OF SOLIDS. [1958] 31p. 1 ref.
Order from LC or SLA mi$3.00, ph$6.30 59-10972

Trans. of Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1941, v. 11, no. 1, p. 60-73.

A new theory is developed for the fine X-ray absorption structure of solids in agreement with which the latter is determined by distortions (scattering) of the X-ray electron wave of the absorbed atom - atoms of the nearest vicinity. The Peterson method is used for the synthesis of the theory, as applied to the theory of molecular X-ray absorption. Numerical calculations of the fine X-ray absorption spectrum are made for polycrystalline copper; the results are in good agreement with the experiment.

Levina, L. E.
THE ISOTOPIC ANALYSIS OF SOLIDS BY MEANS OF THE "MS" MASS SPECTROMETER, tr. by E. G. Peters. 1958 [5]p. 1 ref. IGRL-T/CA-91.
Order from LC or SLA mi$1.80, ph$1.80 59-10325

Trans. of Prib[ory] i Tekh[nika] Eksp[erimenta] (USSR) 1957, v. 5, Sep/Oct, p. 114-116.

Schüler, H. and Stockburger, M.
ON THE REACTION MECHANISM OF ORGANIC MOLECULES IN THE POSITIVE COLUMN OF A GLOW DISCHARGE (Über den Reaktionsmechanismus Organischer Moleküle in der Positiven Säule einer Glimmentladung). [1958] [13]p. 8 refs. Tr57-165.
Order from SLA mi$2.40, ph$3.30 59-10578

Trans. of Zeitschrift für Naturforschung (West Germany) 1957, v. 12a [no. 6] p. 507-513.

Optics

Ar[n]ulf, [Albert] Van Heel [A. C. S.] and Perring [Emile].
METROLOGY. ON AN OPTICAL METHOD OF LOCALIZATION OF POLISHED SURFACES. [1959] 1p. (1 table omitted) 1 ref.
Order from SLA mi$1.80, ph$1.80 59-15225

Trans. of [Academie des Sciences, Paris]. Comptes Rendus, 1929, v. 188, p. 860-861.

A method is presented for the measurement of very small displacements of an optically polished surface. Although it does not reach the precision of the interference method, the procedure is sufficiently precise for most metrological applications.

Haussähl, H. and Hamann, K.
A NEW METHOD FOR MEASURING GLOSS. [1959] 13p. (8 figs. omitted) 1 ref.
Order from SLA mi$2.40, ph$3.30 59-15656

Trans. of Farbe und Lack (West Germany) 1958, v. 64 [no. 12] p. 642-649.

A method is proposed which characterizes the gloss of a surface by a curve composed of 2 parts, a flat part representing the scattered light and a steep part which serves as a definition of the gloss. The total reflection and the image sharpness of a surface is comprehended by the maximum and the half-value of the width. It is possible with this gloss curve and the maximum and half-value of the width values derived from it to execute a contradiction-free gloss measurement.

Margolin, I. A. and Rumyantsev, N. P.
FUNDAMENTALS OF INFRARED TECHNOLOGY. [1958] [320]p. 20 refs. F-TS-10089/V.
Order from LC or SLA mi$11.10, ph$48.60 59-18105

Trans. of mono. Osnovy Infrakrasnoy Tekhniki, Moscow, 1955, 263p.

This comprehensive handbook includes chapters on thermal radiation and its basic laws, on photoelectric cells with extrinsic or intrinsic photoelectric effect, on selective and nonselective indicators, on optical filters for infrared rays, and on optical systems. The passage of infrared rays through the atmosphere is discussed. The work is based on a bibliography drawn exclusively from Soviet sources.

Solid State Physics

Adda, Y., Mairy, C., and Bouchet, P.
STUDY OF URANIUM; ZIRCONIUM DIFFUSION, tr. by Liz Appleby. 20 Nov 58, 15p. (21 figs. omitted) 25 refs.
Order from SLA mi$2.40, ph$3.30 AEC-tr-3503

Trans. of C[ommissariat a l'] E[nergie] A[tomique. Rapport] (France) 1957, no. 672.

Agranovich, V. M. and Faidysh, A. N.
MIGRATION AND TRANSMISSION OF ELECTRON EXCITATION ENERGY FROM THE BASE MATERIAL TO THE IMPURITY IN MOLECULAR CRYSTALS IN THE PRESENCE OF TWO TYPES OF EXCITONS. [1959] 7p. 7 refs. A. C. S. I. L. Trans. no. 995.
Order from LC or SLA mi$1.80, ph$1.80 59-15139

Trans. of Optika i Spektroskopiya (USSR) 1956, v. 1, p. 983-987.

Equations are derived dealing with the problem of the concentration dependence of the luminescence quantum yields in the presence of two types of excitations neglecting reabsorption and assuming that the two types of excitons are interchangeable. Analysis of the resulting equation indicates that the luminescence yield of the base material may increase somewhat with the increase in the absorption coefficient, while the luminescence yield of the impurity may decrease.

Bertaut, Félix and Forrat, Francis.
STRUCTURE OF FERRIMAGNETIC FERRITES OF RARE EARTHS. Jan 59, 6p. 9 refs. TR-59-6.
Order from SLA mi$1.80, ph$1.80 59-15223

Trans. of Académie des Sciences [Paris]. Comptes Rendus, 1956, v. 242 [no. 3] p. 382-384.

Bölhouwer, Cornelis, Elk, Jacob van, and Waterman, Hein I.
ULTRASOUND FOR DETERMINING BRANCHING IN SATURATED HYDROCARBONS, tr. by Ernst M. Cohn. 9 Mar 59 [7]p. 11 refs.
Order from SLA mi$1.80, ph$1.80 59-15121

Trans. of Erdöl [und] Kohle (West Germany) 1958, v. 11, no. 11, p. 778-781.

Corradini, P[aolo] and Bassi, I[vano] W[alter]
CRYSTALLINE STRUCTURE OF METALORGANIC COMPLEXES CONTAINING ALUMINUM AND TITANIUM. [1958] [10]p. 3 refs.
Order from SLA mi$1.80, ph$1.80 59-10834

Trans. of Accad[emia] Nazionale [dei] Lincei. Classe [di] Sci[enze] Fiz[iche] Mat[ematiche] e Nat[urali. Rendiconti] (Italy) 1958 [ser. 8] v. 24 [no. 1] p. 43-49.

The crystalline structure of $(C_5H_5)_2TiCl_2Al(C_2H_5)_2$ was examined by the rotating crystal method ($CuK\alpha$ radiation) in a Weissenberg chamber. By Patterson analysis the spatial grouping was determined to be Pnma (D_{2h}^{16}) and an analysis of the hkl reflections showed that the heavy atoms form a square bridge with sides of about 2.5 A. The Patterson maxima suggest that: (1) Both the Ti and Al show approximately tetrahedral coordination, (2) The ethyl groups are attached to the Al, (3) The molecule has a plane of symmetry which passes through the four heavy atoms.

Drescher, F. K. and Böttcher, G.
FORCED MIGRATION OF IONS OF MONOVALENT METALS IN QUARTZ. [1959] 4p. 1 refs.
Order from SLA mi$1.80, ph$1.80 59-10958

Trans. of Die Naturwissenschaften (Germany) 1955, v. 42, no. 11, p. 341-342.

Metal ions of monovalent metals (Ag, Cu) were made to move through quartz prisms at temperatures of 450° C and above by application of an electric field,

using anodes of the metal tested and cathodes of the same metal, or graphite. A series of laminar depositions resulted, the first on the cathode and the rest at equal intervals within the crystal. There seemed to be a "clogging" in an area anterior to each deposition which was removed by higher voltage (330 v, 6 amp). With graphite electrodes, an artificial smoky quartz was produced at 650°.

Folberth, O. G.
THE INFLUENCE OF POLARIZATION ON THE SEMICONDUCTOR PROPERTIES OF $A^{III}B^{V}$ COMPOUNDS. [1958] 19p. 36 refs.
Order from SLA mi$2.40, ph$3.30 59-10725

Trans. of Z[eitschrift für] Naturforsch[un]g (West Germany) 1958, v. 13a [no. 10] p. 856-865.

Garber, R. I., Gindin, I. A. and others.
HEAT-TREATMENT OF TWINNED IRON CRYSTALS [1959] [4]p. 6 refs.
Order from LC or SLA mi$1.80, ph$1.80 59-15312

Trans. of Akad[emiya] Nauk [SSSR]. Dok[lady] 1950, v. 74, no. 2, p. 343-344.

The experiments were undertaken to find those features of twinning common to ionic and metallic crystals. Twinned crystals of carbon-free iron were obtained by rupture of test pieces having a mean diameter of 1.5 to 2 mm. at the temperature of liquid nitrogen. These were then subjected to a heat treatment at 850°C. The results were in full agreement with those of similar experiments on sodium nitrate crystals.

Ginsberg, Hans, Hüttig, Werner and Strunk-Lichtenberg, Gustl.
THE INFLUENCE OF RAW MATERIAL ON CRYSTALLINE SHAPES FORMED DURING THERMAL DECOMPOSITION AND TRANSFORMATION, RESPECTIVELY, OF ALUMINUM HYDROXIDES. I. THE CRYSTALLINE FORMS OF THERMAL DECOMPOSITION OF γ - ALUMINUM HYDROXIDES. [1959] [25]p. 16 refs.
Order from SLA mi$2.70, ph$4.80 59-15076

Trans. of Z[eitschrift für] Anorg[anische] Chemie (East Germany) 1957, v. 293 [no. 1/2] p. 33-46.

The γ-hydroxides of aluminum [$Al(OH)_3$ = hydrargillite and AlOOH = bohmite] were thermally decomposed and transformed, respectively, in eight parallel experimental series. The course of calcination was influenced by the type of raw material as well as by its method of recovery. If γ-$Al(OH)_3$ contains bohmite, then it is decomposed "double tracks." The hydrargillite obtained by the Bayer method always contains a small amount of bohmite. Pure bohmite cannot be obtained from the trihydroxide by heating in air, while it can be obtained without difficulty hydrothermally and in a base. The thermal transformation of bohmite always follows via two intermediate forms which are always reproducible. The course of the thermal transformation and the stability of the individual intermediate forms are influenced already by small amounts of foreign ions (e.g., K^+, Na^+) which are built into the layer lattices of the Al-hydroxides.

Glauberman, A. Yu. and Muzichuk, O. M.
ON THE THEORY OF SEMICONDUCTOR RESISTANCE IN STRONG MAGNETIC FIELDS.
17 Dec 58, 10p. 11 refs. TG-37.
Order from LC or SLA mi$1.80, ph$1.80 59-10239

Trans. of Ukr[ayins'kyy] Fiz[ychnyy] Zh[urnal] (USSR) 1958, v. 3, no. 2, p. 178-184.

The formalism of the polar model of a crystal is used to construct a theory of galvanomagnetic phenomena in semiconductors. This method permits quantization of the energy spectrum of quasi-particles in a magnetic field to be taken into account. A formula is given for the specific resistance of a semiconductor without impurities which can be generalized to those with impurities.

Osipov, K. A.
ON THE ENERGY OF VACANCY FORMATION IN SOLID METALS. [1958] 5p. 21 refs.
Order from LC or SLA mi$1.80, ph$1.80
AEC-tr-3464

Trans. of *A[kademiya] N[auk SSSR]. D[oklady] 1958, v. 121 [no. 5] p. 855-[857].

In working with the role of vacancies in self-diffusion processes a quantity $q = -T_s [(H_{T_s} - H_{298^\circ}) (6.7 - \ln T_s)/(T_s - 298^\circ) - S_{298^\circ}]$, was obtained where T_s is the melting temperature; $(H_{T_s} - H_{298^\circ})$ is the difference of the molar heat content of the solid metal at the melting point from that at the standard temperature. Although it is difficult to connect q with E_O, it is shown by experiment that the equation may be used to calculate E_O. It was found that q is still more closely connected with energy of shear formation than is the latent heat of melting; $\mu a^3 \cong 1.5q$, where μ is the shear modulus and a^3 the atomic volume.

Palatnik, L. C. and Kontorovich, V. M.
ANALYSIS OF MULTICOMPONENT HETEROGENEOUS SYSTEMS BY THE GENERALIZED "CENTER OF GRAVITY" RULE. [1958] 18p. 4 refs.
Order from LC or SLA mi$2.40, ph$3.30 59-10737

Trans. of Zhur[nal] Fiz[icheskoy] Khim[ii] (USSR) 1954, v. 28, no. 9, p. 1599-1614.

The application is shown of a generalized center-of-gravity rule (Doklady Akad. Nauk SSSR 95: 1227, 1954) to crystallization processes with random variance in n-component systems with the formation of chemical compounds and solid solutions. Formulas are given for the general case of a variant crystallization process and conditions are discussed for the termination of an invariant process. An application to a ternary system is given as an example of a possible solution of the invariant process in an n-component system as a function of the ratio of component concentrations in the original solution.

Ravich, M. I. and Shcherbakova, L. G.
NATURE OF THE SOLID PHASE WHICH CRYSTALLIZES FROM AQUEOUS SOLUTIONS OF TRISODIUM ORTHOPHOSPHATE AT HIGH TEMPERATURES. [1959] 12p.
Order from ATS $14.80 ATS-65L29R

Trans. of Akad[emiya] Nauk SSSR. Sektor Fiz[iko]-Khim[icheskogo] Anal[iza]. Izvest[iya] 1955, v. 26, p. 248-258.

Siebel, E[rich].
INDUSTRIAL MECHANISM OF PLASTIC DEFORMATION (Technologische Mechanik der Bildsamen Verformung). [1959] [24]p. 55 refs. (foreign text included).
Order from SLA mi$2.70, ph$4.80 59-15187

Trans. of Arch[iv] f[ür] d[as] Eisenhüttenwesen (Germany) 1944, v. 18 [no. 1/2] p. 13-22.

Tauc, Jan and Matyas, Milos.
THE ELECTRIC AND THERMOELECTRIC PROPERTIES OF INDIUM ANTIMONIDE. [1959] 27p.
Order from SLA mi$2.70, ph$4.80 AEC-tr-3512

Trans. of Chekhoslov[atskii] Fiz[icheskii] Z[hurnal] (Czechoslovakia) 1955, v. 5 [no. 3] p. 369-383.

The results of the measurings of electric conductivity, Hall coefficient and thermo-electric powers were obtained on 4 samples of InSb, two of which were of the type N and two of the type P in the range of temperatures from -180° to +400°C. Comparison with the theory showed that the electronic gas in InSb degenerates in many temperature ranges and at higher temperatures a thermal distribution of the electrons on the atoms of the lattice prevails; the effective mass of the electrons $m_n/m = 3.6 \cdot 10^{-3}$ was determined, a constant throughout the interval of temperatures.

Umanskiy, Ya. S. and Pivovarov, L. Kh.
X-RAY DIFFRACTION METHODS FOR INVESTIGATION OF THE MOSAIC STRUCTURE OF METAL. [1959] 10p. 48 refs. T-2905.
Order from LC or SLA mi$1.80, ph$1.80 59-15321

Trans. of *Zavodskaya Laboratoriya (USSR) 1958, v. 24, no. 5, p. 549-554.

The most complete and reliable data on mosaic structure can be obtained by x-ray diffraction analysis. The mosaic structure can be determined from integral intensities of interference, the width and form of the diffraction lines, the investigation of the size, form and complexity of the structure of single crystal reflections and the methods in which the misorientation of blocks is determined from oscillation curve analysis.

Thermodynamics

Chukhanov, Z. F. and Karjavina, N. A.
COMBUSTION OF CARBON. V. COMBUSTION OF THE COAL LAYER. [1958] [30]p. (13 figs. and 9 formulas omitted) 2 refs.
Order from LC or SLA mi$2.70, ph$4.80 59-10781

Trans. of [Zhurnal Tekhnicheskoy Fiziki] (USSR) 1940, v. 10, no. 15 [p. 1256-1267].

A study was made of the reactions which take place in the oxygen zone and which determine the gas composition on its leaving the zone, at the high linear speeds of the gas flow. The basic experimental material was obtained from previous studies by N. A. Karjavina on the dynamics of gas formation in the coal layer. Results showed that oxygen used in the reaction with carbon in the O_2 zone is distributed between the reaction of combustion (i. e., the reaction of exceptional formation of carbon monoxide) and the reaction of oxidation. The simplest equation that expresses the reaction of combustion is $2C + O_2 = 2CO$. The reaction of combustion almost invariably takes place simultaneously with the reaction of oxidation, $4C + 3O_2 = 2CO + 2CO_2$. The reaction of oxidation takes place most frequently according to $3C + 2O_2(\text{absorb}) \rightarrow C_3O_4(\text{surface complex})$, or $C_3O_4 + C + O_2(\text{from gas}) \rightarrow 2CO + 2CO_2$, and less frequently according to $C_3O_4 + CO_2 \rightarrow 2CO$. The gas formation is sometimes determined almost exclusively by the reaction of combustion. Under normal conditions the reaction of combustion becomes noticeable only at temperatures above 700° to 800° C.

Doucet, Y. and Ravoux, J. P.
SETTING AND USING FIXED THERMOMETRIC POINTS. [1959] [4]p. (5 figs. omitted) 9 refs.
Order from SLA mi$1.80, ph$1.80 59-15529

Trans. of Journal de Physique et le Radium (France) 1957, v. 18, no. 3, suppl., p. 41A-44A.

Methods for making triple point cells using water, phenyl oxide, or benzoic acid are described.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

AKADEMIYA NAUK SSSR. DOKLADY, 1958 (Reports of the Academy of Sciences of the USSR
Order from OTS $1.40, $20.00/6 mo.
Foreign $1.65, $24.50/6 mo.

V. 122, no. 1, p. 9-43, PB 141 015T-14
V. 122, no. 3, p. 327-535, PB 141 015T-16
V. 122, no. 4, p. 543-744, PB 141 015T-15
V. 122, no. 5, p. 751-952, PB 141 015T-18
V. 123, no. 2, p. 215-383, PB 141 015T-17

Consists of abstracts in English.

AKADEMIYA NAUK SSSR. VESTNIK, 1958 [v. 28] (Herald of the Academy of Sciences of the USSR). [1959].
Order from OTS $0.50, $6.00

No. 3, p. 3-134, PB 141 025T-11
No. 11, p. 3-144, PB 141 025T-12

Consists of abstracts in English.

*IZMERITEL'NAYA TEKHNIKA (USSR) 1958 (Measurement Techniques). [1959]
Order from OTS $0.70, $4.00/year
Foreign $0.95, $5.50/year

1958, no. 6, p. 3-99, PB 141 112T-5
1959, no. 2, p. 1-63, PB 141 112T-6

Consists of abstracts in English.

STANDARTIZATSIYA (USSR) 1959, NO. 1, P. 3-62 (Standardization). [1959] [20]p. SOV-28-59-1-(1-29)/29.
Order from OTS $0.50, $3.00/year PB 141 023T-6

Consists of abstracts in English.

Sewig [Rudolf].
THE PHOTO-ELECTRIC CELL AS A MEASURING INSTRUMENT. [1959] [12]p. (14 figs. omitted) 35 refs.
Order from SLA mi$2.40, ph$3.30 59-15635

Trans. of Z[eitschrift] f[ür] Instrumentenkunde (Germany) 1930, v. 50 [no. 7] p. 426-437.

Applications and design of photoelectric cells are discussed in a review based on an extensive bibliography. Topics covered include galvanometric measurement, photometry with unanalyzed light, spectral photometry and calorimetry, absorption and blackening measurements, polarimetry and optical crystallography.

SOCIAL SCIENCES

Kononenko, A.
LOCAL WARS IN US POLICY AND STRATEGY (Lokal'nyye Voyny v Politike i Strategii SShA) tr. by Hutcheson. [1959] [11]p. 15 refs. H-2589.
Order from LC or SLA mi$2.40, ph$3.30 59-16790

Trans. of Mirovaya Ekonomika i Mezhdunarodnye Otnosheniya (USSR) 1958, no. 10, p. 16-25.

Limited wars with the use or threat of atomic weapons are emerging as the weapon of aggressive policy of the imperialist powers for the strengthening of colonialist positions and the suppression of national liberation movements, etc. "

BOOK REVIEWS

The following book reviews can be ordered by number from OTS for 50 cents. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and a detailed table of contents. The length of each review is indicated at the end of the entry.

BR-SOV/1383
Zakharov, Boris Petrovich
TERMICHESKAYA OBRABOTKA METALLOV (Heat Treatment of Metals), Moscow, Mashgiz, 1957. 302 p. 25,000 copies printed.

A textbook dealing with phase transformations in steel during heat treatment; elements of heat-treating operations; and technological processes of heat treating. 6p.

BR-SOV/1417
Abramov, Isay Viktorovich
CHERNAYA METALLURGIYA (Ferrous Metallurgy) Moscow, Gospolitizdat, 1958. 156 p. (Series: Narodnoye khozyaystvo SSSR) 5,000 copies printed.

A booklet for industrial activists, agitators, and propagnada agents in the metallurgical industry. 2p.

BR-SOV/1429
Matissen, Petr Petrovich, and Natal'ya Sergeyevna Kiseleva
PROIZVODSTVO VISKOZNOGO SHTAPEL'NOGO VOLOKNA (Production of Viscose Staple Fiber) 2d ed., rev. and enl. Moscow, Gizlegprom, 1958. 243 p. 3,000 copies printed.

Information for engineers and technicians employed in the synthetic fiber industry. 5p.

BR-SOV/1442
Krasavtsev, Nikolay Ivanovich
PERSPEKTIVY RAZVITIYA DOMENNOGO PROIZVODSTVA (Prospects for the Development of the Blast Furnace Industry) Moscow, Metallurgizdat, 1958. 558 p. 3,000 copies printed.

A review of the development of the blast furnace industry during the 19th and 20th centuries, and the main trends of the future. 4p.

BR-SOV/1451
Pagava, S.T., N. A. Aristov, L. I. Blyumina, N. M. Zakharova, and N. A. Sevalkina
VLIYANIYE SEVERNOY ATLANTIKI NA RAZVITIYE SINOPTICHESKIKH PROTSESSOV (Influence of the North Atlantic on the Development of the Synoptic Processes) Moscow, Gidrometeoizdat, 1958. 70 p. 1,200 copies printed.

A booklet for those engaged in long range weather forecasting. 2p.

BR-SOV/1458
DOSYAHNENNYA SUCHASNOYI FIZYKY, VYP. 5 (Acheivements of Modern Physics, nr. 5) Kiyev, Radyans'ka shkola, 1957. 310 p. 3,500 copies printed.

A collection of articles on recent Soviet advances in nuclear research and in the application of nuclear energy. 3p.

BR-SOV/1478
Margolis, Liya Yakovlevna
MECHENYYE ATOMY V KATALIZE (Tagged Atoms in Catalysis) Moscow, Izd-vo AN SSSR, 1958. 65 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 15,000 copies printed.

A popular presentation of the use of tagged atoms in catalysis. 2p.

BR-SOV/1495
Lozinskiy, Mikhail Grigor'yevich
PROMYSHLENNOYE PRIMENENIYE INDUKTSIONNOGO NAGREVA (Industrial Application of Induction Heating) Moscow, Izd-vo AN SSSR, 1958. 470 p. 5,000 copies printed.

An explanation of the theoretical principles of induction heating of metals. 4p.

BR-SOV/1522
Grinberg, David Yefimovich
RAZMETCHIK MEKHANICHESKIKH TSEKHOV (Machine Shop Layout Man) Mashgiz, 1958. 315 p. 16,000 copies printed.

A discussion of important problems concerning the layout of machine parts. 4p.

BR-SOV/1525
Bartenev, Prokofiy Vasil'yevich, and Viktor Prokhorovich Parfenov
VODNYY, AVTODOROZHNYY, VOZDUSHNYY I PROMYSHLENNYY TRANSPORT (Water, Highway, Air, and Industrial Transport) Moscow, Transzheldorizdat, 1958. 303 p. 4,000 copies printed.

Basic information on the design, construction, installation and exploitation of all means of transport. 6p.

BR-SOV/1528
Speranskiy, Viktor Grigor'yevich, and Gennadiy Vasil'yevich Plenchun
VAKUUMNAYA OBRABOTKA STALI (Vacuum Treatment of Steel) [Moscow] Izd-vo VTsSPS Profizdat, 1958. 68 p. 3,000 copies printed.

A discussion of the advanced processes of steel making in a vacuum. 2p.

BR-SOV/1553
Levitanskiy, Boris Aronovich
ELEKTROOBORUDOVANIYE PODGOTOVITEL'NOGO PROIZVODSTVA CHERNOY METALLURGII; RUDNIKOV, AGLOMERATSIONNYKH FABRIK I KOKSOKHIMICHESKIKH ZAVODOV (Electrical Equipment for the Initial Stages of Ferrous Metallurgy; Mines, Sintering, and Coke Plants) Moscow, Metallurgizdat, 1958. 256 p. 6,800 copies printed.

A textbook for ferrous metallurgy tekhnikums on the subject of "Electrical Equipment of Industrial Enterprises." 5p.

BR-POL/1564
Trusz, Wlodzimierz
TELETECHNIKA (Communications) Warsaw, Wydawnictwa komunikacyjne, 1958. 431 p. 5,150 copies printed.

A presentation of the fundamentals of electrical engineering and communications. 6p.

BR-SOV/1577
Ditrikh, Konstantin Feliksovich
RADIOPRIYEMNYYE USTROYSTVA (Radio Receiving Systems) Leningrad, Izd-vo "Morskoy transport," 1958. 395 p. 12,000 copies printed.

A textbook in radio engineering. 5p.

BR-SOV/1578
Parkhomenko, Vasiliy Yefimovich
TEKHNOLOGIYA PERERABOTKI NEFTI I GAZA (Technology of Petroleum and Gas Refining) 2nd ed., rev. and enl. Moscow, Gostoptekhizdat, 1959. 452 p. 7,500 copies printed.

A textbook for students in Petroleum Tekhnikums and a handbook for technicians and operators of oil refineries. 11p.

BR-SOV/1581
Mikheyev, Valentin Aleksandrovich
GIDROPRESSOVYYE USTANOVKI SVERKHVYSOKIKH DAVLENIY (Super-high Pressure Hydraulic Presses) Moscow, Mashgiz, 1958. 117 p. 5,000 copies printed.

Material on the development and operation of hydraulic presses operating at super-high pressures. 2p.

BR-SOV/1583
Avrutin, Sergey Vladimirovich
FREZERNOYE DELO (Milling) 4th ed., rev. and enl., Moscow, Trudrezervizdat, 1958. 541 p. 65,000 copies printed.

A manual covering various aspects of milling, from theoretical concepts of cutting to performance of complex operations on special machinery. 6p.

BR-SOV/1587
Fialkov, Yakov Anatol'yevich
MEZHGALOIDNYYE SOYEDINENIYA (Halogen Halides) Kiyev, Izd-vo AN UKrSSSR, 1958. 393 p. 2,000 copies printed.

A survey of the physical and chemical properties of halogen halides and of their complexes with inorganic and organic compounds. 8p.

BR-SOV/1589
Akademiya nauk SSR.
KHIMIYA BOL'SHIKH MOLEKUL; SBORNIK STATEY (Chemistry of Large Molecules; Collection of Articles) Moscow, Izd-vo AN SSSR, 1958. 299 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 30,000 copies printed.

A manual for propagandists, teachers, and journalists. 4p.

BR-SOV/1593
Dorin, Vasiliy Ivanovich
TOCHNAYA SHTAMPOVKA DETALEY OPTIKO-MEKHANICHESKIKH PRIBOROV (Precision Cold-pressing of Parts for Optical-mechanical Devices) Moscow, Oborongiz, 1958. 458 p. 7,050 copies printed.

The book deals in particular with the stamping of small precision parts for photographic cameras and optical equipment. 5p.

BR-SOV/1598
Neyman, Mikhail Samoylovich
KURS RADIOPEREDAYUSHCHIKH USTROYSTV. CH. II: RADIOPEREDATCHIKI SVERKHVYSOKIKH CHASTOT (Course in Radio Transmitting Apparatus. Pt. 2: Superhigh-frequency Transmitters) Moscow, Izd-vo "Sovetskoye radio", 1958. 398 p. No. of copies printed not given.

A textbook for students of radio-engineering departments of polytechnical vuzes. 4p.

BR-SOV/1600
USSR. Glavnoye upravleniye nauchno-issledovatel'skikh i proyektnykh organizatsiy. Nauchno-issledovatel'skoye byuro tekhnicheskikh normativov
REZHIMY REZANIYA MINERALOKERAMICHESKIMI INSTRUMENTAMI; TOCHENIYE I FREZEROVANIYE (Operating Conditions for Cutting With Ceramic Tools; Turning and Milling) Moscow, Mashgiz, 1958. 49 p. 8,000 copies printed.

Standards for machining various kinds of steel and cast iron with ceramic-tipped cutting tools. 2p.

BR-SOV/1609
Khoroshikh, Grigoriy Andreyevich
VOLOCHIL'SHCHIK TRUB (The Tube Drawing Operator) Sverdlovsk, Metallurgizdat, 1958. 173 p. 2,700 copies printed.

Principles of physics and chemistry related to tube drawing. 5p.

BR-SOV/1610
Mikhaylov, Yevgeniy Arkad'yevich
O POVYSHENII TOCHNOSTI SCHETNO-RESHAYUSHCHIKH PRIBOROV METODOM REGULIROVKI. (Increasing the Precision of Computers by the Adjustment Method) Moscow, Oborongiz, 1958. 107 p. 4,850 copies printed.

The role of adjustment among the other methods of obtaining the required accuracy in the mechanisms of precise instruments. 2p.

BR-SOV/1613
Breger, I. D.
SPRAVOCHNIK INSTRUMENTAL'SHCHIKA DLYA MASTEROV I KVALIFITSIROVANNYKH RABOCHIKH INSTRUMENTAL'NYKH TSEKHOV (Tool Maker's Handbook for Foremen and Skilled Workers of Tool-Makers' Shops) Minsk, Gosizdat USSR, 1958. 385 p. 15,000 copies printed.

Information about tolerances, interoperational allowances, work conditions, and the economic aspects of machining accuracy in industrial operations. 9p.

BR-SOV/1614
Kas'yankov, Pavel Petrovich
TEORIYA ELEKTROMAGNITNYKH SISTEM S KRIVOLINEYNOY OS'YU (Theory of the Electromagnetic System With Curvilinear Axis) [Leningrad] Izd-vo Leningr. univ., 1956. 84 p. 320 copies printed.

The optics of electromagnetic systems with curvilinear axis. 3p.

BR-SOV/1620
Lukinnykh, Aleksandr Ivanovich
USOVERSHENSTVOVANIYE METODOV SVOBODNOY KOVKI (Improving Methods of Open Die Forging) Moscow, Mashgiz, 1958. 19 p. (Series: Obmen tekhnicheskim opytom) 6,000 copies printed.

The author's life and work in the forging ship. 1p.

BR-SOV/1621
Kukhtarov, Vladimir Ivanovich
STOYKOST' SHTAMPOV DLYA KHOLODNOY LISTOVOY SHTAMPOVKI (Service Life of Dies Used for Cold Pressing of Sheet Materials) Moscow, Mashgiz, 1958. 88 p. 7,000 copies printed.

A discussion of various factors which affect the service life of dies used for sheet metal work. 2p.

BR-SOV/1625
Tikhonov, Nikolay Vasil'yevich, and Vasiliy Mikhaylovich Mayorov
NOVYYE KONSTRUKTSII KONVEYYEROV DLYA GORNOY I METALLURGISHESKOY PROMYSHLENNOSTI (New Design for Conveyors Used in the Mining and Metallurgical Industry) Moscow, Metallurgizdat, 1957. 76 p. 3,500 copies printed.

Descriptions of basic types of Soviet and non-Soviet conveyors. 2p.

BR-SOV/1628
Belen'kiy, Lyudvig Iosifovich
TEORIYA KRASHENIYA I OPYT YEYE PRAKTICHESKOGO PRIMENENIYA (Theory of Dyeing and Experience in Its Practical Application) Moscow, Gizlegprom, 1958. 189 p. 2,500 copies printed.

Lectures given by the author to textile workers supplemented by the latest data from experiments and literature. 2p.

BR-SOV/1631
Tochil'nikov, David Gershevich
PRIMENENIYE RADIOAKTIVNYKH IZOTOPOV NA VODNOM TRANSPORTE (Use of Radioactive Isotopes In Water Transportation) Leningrad, Izd-vo "Rechnoy transport," Leningr. otd-nie, 1958. 95 p. 3,500 copies printed.

The utilization of radioactive isotopes in water transportation. 2p.

BR-SOV/1635
Kustov, Pavel Andreyevich
ISPYTANIYA SUDOVYKH PAROSILOVYKH TURBINNYKH USTANOVOK (Testing Marine Steam Turbine Power Plants) Leningrad, Sudpromgiz, 1958. 227 p. 4,000 copies printed.

A manual for acceptance testing of steam-turbine power plants and ships to determine operational data. 2p.

BR-SOV/1643
Avayev, Sergey Aleksandrovich, Andrey Pavlovich Krylov, and Boris Mikhaylovich Ozerskiy
OBSHCHAYA ELEKTROTEKHNIKA (General Electrical Engineering) Moscow, Gosenergoizdat, 1959. 447 p. 100,000 copies printed.

Development and application of mathematician's methods and ideas to the solution of problems of the theory of orthogonal polynomials. 8p.

BR-SOV/1649
Panasenko, Fedor Lavrent'yevich
PROKATKA I TERMICHESKAYA OBRABOTKA TOLSTYKH LISTOV (Rolling and Heat Treatment of Plates) Moscow, Metallurgizdat, 1959. 152 p. 3,400 copies printed.

A description of the manufacturing process of rolling carbon and alloy steel plates and modern two-stand tandem, continuous and semi-continuous plate mills. 2p.

BR-SOV/1650
Zorev, Nikolay Nikolayevich
RASCHET PROYEKTSIY SILY REZANIYA (Calculation of Cutting Force Projections) Moscow, Mashgiz, 1958. 54 p. 7,000 copies printed.

Various methods employed to study and determine the magnitude and direction of forces involved in metal cutting operations. 2p.

BR-SOV/1651
Rodionov, Vladimir Mikhaylovich
IZBRANNYYE TRUDY (Selected Works) Moscow, Izd-vo AN SSSR, 1958. 792 p. 2,500 copies printed.

Papers selected for their theoretical value or significance to the chemical industry. 11p.

BR-SOV/1664
Pristuplyuk, N. I.
TEKHNOLOGIYA LITEYNOGO PROIZVODSTVA, LABORATORNYY PRAKTIKUM (Foundry Engineering; a Laboratory Manual) 2nd ed. Moscow, Mashgiz, 1958. 54 p. 10,000 copies printed.

Instructions for facilitating organization and conducting laboratory work. 3p.

BR-SOV/1679
Froshikov, Aleksandr Ivanovich, and Aleksandr Lukich Usan
SCHETNO-PERFORATSIONNYYE 45-KOLONNYYE MASHINY; TEKHNICHESKOYE OBSLUZHIVANIYE I REMONT (Forty-Five Column Punched Card Computer; Servicing and Repair) Moscow, Mashgiz, 1958. 270 p. 3,000 copies printed.

Basic information for the maintenance and repair of a 45-column punched card computer. 6p.

BR-SOV/1686
Ryapolov, Aleksandr Fedorovich
IZGOTOVLENIYE I MONTAZH APPARATURY IZ NERZHAVEYUSHCHIKH STALEY (Manufacture and Assembly of Stainless Steel Equipment) Moscow, Gosstroyizdat, 1958. 234 p. 4,000 copies printed.

Properties of austenitic chromium-nickel steels and their processing under field conditions, manufacture; and mounting of large equipment for the chemical industry. 2p.

BR-SOV/1687
Gladkov, B. A., L. N. Grachev, P. M. Shpigel'shteyn, V. A. Kudinov, A. S. Lapidus, G. M. Azarevich, Yu. A. Leshchenko
MODERIZATSIYA TOKARNYKH STANKOV; RUKOVODYASHCHIYE MATERIALY (Modernization of Lathes; Instructions) Moscow, Mashgiz, 1958. 286 p. 6,800 copies printed.

An analysis of the existing operating stock of lathes and establishes basic trends in modernization. 3p.

BR-SOV/1691
Liberman, Yefim Arsent'yevich
DOZIMETRIYA RADIOAKTIVNYKH IZOTOPOV (Dosimetry of Radioactive Isotopes) Moscow, Medgiz, 1958. 186 p. 7,000 copies printed.

Methods of measuring and calculating the basic dosimetric characteristics of alpha-, beta- and gamma-radiation of radioactive isotopes. 4p.

BR-SOV/1702
Grin, V. P.
O SEYSMICHNOSTI KOK-SHAAL (Seismicity of the Kok-Shaal Region) Frunze, AN Kirgizskoy SSSR, 1958. 138 p. 500 copies printed.

Study of instrumental data on the earthquakes in Kok-Shaal region. 2p.

BR-SOV/1711
Semyachkin, Sergey Yefremovich, and Gleb Vasil'yevich Filaretov
KONTAKTNAYA ELEKTROSVARKA (Electric Resistance Welding) Moscow, Trudrezervizdat, 1958. 125 p. (Series: Biblioteka molodogo rabochego) 17,000 copies printed.

A description of resistance welding methods and welding equipment commonly used in Soviet industry. 2p.

BR-SOV/1704
Khrekov, Vladimir Ivanovich
P'YEZOELEKTRICHESKIYE MATERIALY I TEKHNOLOGIYA IZGOTOVLENIYA IZDELIY IZ NIKH (Piezoelectric Materials and the Technology of Manufacturing Parts From Them) Leningrad, Sudpromgiz, 1956. 43 p. (Series: Nauchno-Proizvodstvennyy opyt) 500 copies printed.

Theoretical and practical experience gained in the USSR and abroad in the production of piezoelectric materials and parts. 2p.

BR-SOV/1709
Fremke, Andrey Vladimirovich
TELEIZMERENIYA (Telemetering) Moscow, Gosenergoizdat, 1958. 304 p. 25,000 copies printed.

Discussion of basic problems in telemetering instruments, circuits and characteristics of remote control systems. 4p.

BR-SOV/1713
Lupandin, N.
TVORCHESKIY TRUD (Creative Labor) [Moscow] Izd-vo VTsSPS Profizdat, 1953. 73 p. 10,000 copies printed. (Series: Novatory sotsialisticheskogo proizvodstva)

A personal account of the author's life from farm origins to work in a milling plant. 2p.

BR-SOV/1714
Pomerantsev, Vladimir Vladimirovich
ELEMENTY PREDVARITEL'NYKH PROMYSHLENNYKH OTSENOK RUDNYKH MESTOROZHDENIY TSVETNYKH METALLOV. (Principles of Preliminary Economic Evaluation of Nonferrous Ore Deposits) Moscow, Ugletekhizdat, 1957. 56 p. 4,000 copies printed.

Formulae, graphs and monograms to facilitate the computation of the economic factors when estimating deposits. 2p.

BR-SOV/1723
Bronzov, Anatoliy Samsonovich, and Aleksandr Petrovich Smirnov
BURENIYE NAKLONNYKH SKVAZHIN (Directional Drilling) Moscow, Gostoptekhizdat, 1958. 169 p. 2,000 copies printed.

Development of directional drilling in the Soviet Union and abroad and the latest technology and techniques employed in this type of drilling. 2p.

BR-SOV/1726
Kiselev, B. A.
PRIMENENIYE PLASTMASS V AVIASTROYENII (Use of Plastics in Airplane Construction) Moscow, AN SSSR, 1958. 18 p. (Series: Khimicheskaya Promyshlennost') 3,000 copies printed.

A survey of problems connected with plastic material used in the aircraft and rocket industries. 2p.

BR-SOV/1733
Leningrad. Glavnaya geofizicheskaya observatoriya
VOPROSY FIZIKI PRIZEMNOGO SLOYA VOZDUKHA (Problems in the Physics of the Near-Surface Air Layer) Leningrad, Gidrometeoizdat, 1958. 102 p. (Series: Its: Trudy, vyp. 77) 1,300 copies printed.

Articles dealing with the physical processes of near-surface air masses. 2p.

BR-SOV/1734
Leningrad. Glavnaya geofizicheskaya observatoriya
ISSLEDOVANIYE PROTSESSOV TEPLO- I VLAGOOBMENA NAD VODOYEMAMI (Research in the Processes of Heat and Moisture Exchange Over Water Reservoirs) Leningrad, Gidrometeoizdat, 1958. 130 p. (Series: Its: Trudy, vyp. 78) 1,375 copies printed.

Results of experimental work carried on in 1956 in investigating the meteorological conditions over water reservoirs. 2p.

BR-SOV/1749
Kuznetsov, Sergey Sergeyevich
OTECHESTVENNYYE GEOLOGI (Russian Geologists) Moscow, Uchpedgiz, 1958. 192 p. 11,000 copies printed.

A series of biographical sketches of noted Russian geologists. 1p.

BR-SOV/1758
Matveyeva, N. N.
TABLITSY ZNACHENIY KOMPLEKSNYKH KOEFFITSIYENTOV OTRAZHENIYA-PRELOMLENIYA PRODOL NYKH I POPERECHNYKH (SV) VOLN V SLUCHAYE DVUKH ODNORODNYKH I UZOTROPYNYKH UPRUGIKH SRED, NAKHODYASHCHIKHSYA V ZHESTKOM KONTAKTE DRUG S DRUGOM (Tables of values of complex coefficients of reflection and refraction of longitudinal and transversal (SV) waves in a case of two homogeneous and isotropic elastic mediums rigidly connected with each other) [Leningrad] Izd-vo Leningr. univ., 1957. 420 p. (Series: Materialy kolichestvennogo izucheniya dinamiki seysmicheskikh voln, tom. I) (Materials of a Quantitative Study of the Dynamics of Seismic Waves) 1,100 copies printed.

Intended for geophysics analyzing the seismic records obtained by exploratory groups in search for oil and mineral deposits. 3p.

BR-SOV/1778
Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti. Moskovskoye pravleniye
TRANZISTORNAYA ELEKTRONIKA V PRIBOROSTROYENII; SBORNIK TRUDOV KONFERENTSII (Transistor Electronics in the Instrument-making Industry; Collection of Conference Transactions) Moscow, Oborongiz, 1959. 289 p. 1,400 copies printed.

Discussion of the theory, principle of operation, calculation and application of electronic circuits using transistors. 6p.

BR-SOV/1780
Vlasov, Vasiliy Zakharovich
TONKOSTENNYYE UPRUGIYE STERZHNI (Thin-walled Elastic Bars) 2d ed., rev. and enl. Moscow, Fizmatgiz, 1959. 568 p. Errata slip inserted. 6,000 copies printed.

A general theory for thin-walled bars used as structural elements in building, in shipbuilding, and aircraft construction. 7p.

BR-SOV/1782
Lebedev, Andrey Nikolayevich
SCHETNO-RESHAYUSHCHIYE USTROYSTVA (Analog Computers) Moscow, Mashgiz, 1958. 378 p. Errata slip inserted. 10,000 copies printed.

Fundamentals of the theory of analog computing systems. 5p.

BR-SOV/1792
Ponomarev, Konstantin Petrovich, and Samuil Iovelevich Shteyner
OCHERKI ISTORII NEFTYANOY PROMYSHLENNOSTI KUBANI (Historical Outline of the Kuban Petroleum Industry) Moscow, Gostoptekhizdat, 1958. 97 p. 1,000 copies printed.

Development of geological research, drilling production, refining of oil and living and working conditions of workers in the oil industry before World War II. 2p.

BR-SOV/1796
Moskovskoye obshchestvo ispytateley prirody. Geograficheskaya sektsiya.
REGIONAL'NOYE KARSTOVEDENIYE; TRUDY SOVESHCHANIYA PO REGIONAL'NOMU KARSTOVEDENIYU (Regional Study of Karst Phenomena; Papers of the Meeting on the Regional Study of Karst Phenomena) Moscow, 1958. 79 p. 600 copies printed.

Reports presented at a Confrence on Regional Studies of Karst organized by the Geographical Section of the Moscow Society of Naturalists which took place on April 16, 1958. 2p.

BR-SOV/1797
Huk, M. I., I. K. Polovko, and H. F. Prikhot'ko
KLIMAT UKRAINS'KOI RSR; KOROTKYY NARYS (Climate of the Ukraine: a brief account) Kiev, Derzh. uchbovo-pedagog. vyd-vo "Radyans'ka shkola," 1958. 69 p. 5,200 copies printed.

A brief summary, in layman's language, of the Climate and climate-forming agents of the Ukrainian SSR. 2p.

BR-SOV/1798
Buzulutskov, Fedor Semenovich, Tamara Ivanovna Gurova, Lidiya Illarionovna Korobeynikova, Viktoriya Aleksandrovna Pluman, Antonide Grigor'yevna Poda, Yevgeniia Gerbetovna Sorokina, and Klavdiya Vasil'yevna Yaskina
LITOLOGIYA MEZOZOYA I KAYNOZOYA ZAPADNO-SIBIRSKOY NIZMENNOSTI (Mesozoic and Cenozoic Lithology of the West Siberian Plains) Moscow, Gostoptekhizdat, 1957. 187 p. 1,000 copies printed.

Methods and results of lithological and petrographic studies of Mesozoic and Cenozoic sediments conducted in West Siberian Plains 1950-1954. 4p.

BR-SOV/1801
NEFTYANAYA ARMATURA (Petroleum Equipment Fixtures and Fittings) Moscow, Gostoptekhizdat, 1958. 248 p. (Series: Neftyanoye oborudovaniye, t. 5) 4,850 copies printed.

A reference book and catalogue of petroleum equipment, fixtures, and fittings. 2p.

BR-SOV/1922
Kishkin, Sergey Timofeyevich
VLIYANIYE OBLUCHENIYA NA STRUKTURY I SVOYSTVA KONSTRUKTSIONNYKH METALLOV (Effect of Irradiation on Structure and Properties of Structural Metals) Moscow, Oborongiz, 1958. 39 p. Number of copies printed not given.

Lectures dealing primarily with the effect of radiation on the properties and behavior of metals and alloys. 2p.

BR-SOV/1924
Akademiya nauk SSSR. Ural'skiy filial. Gorno-geologicheskiy institut.
GEOFIZICHESKIY SBORNIK, NO. 2. (Collected Papers on Geophysics, Nr. 2.) Sverdlovsk, 1957. 207 p. Issued also as Its Trudy, vyp. 30 Errata slip inserted. 2,400 copies printed.

New techniques and theoretical considerations involved in gravitational, magnetic, seismic, electrical and gamma radiation exploration methods. 3p.

TRANSLATIONS IN PROCESS BY GOVERNMENT AGENCIES

ADVANCES IN PHYSICAL CHEMISTRY.
Articles of Russian origin in Uspekhi Fizicheskikh Nauk (USSR) 1957, v. 61, 62, 63.

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NUCLEONICS.
Articles of Polish origin in Nukleonika (USSR) 1957, v. 2.

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PROCEEDINGS OF THE 2ND CONFERENCE ON RADIOISOTOPES.
Japan Atomic Industrial Forum, Tokyo, Feb 58, 635p.

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THE THEORY OF CURRENT IN VACUUM (K Teoriitoka v Vakyyme).
Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (USSR) 1939, v. 9, no. 6, p. 742-759.

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THE ACTION OF WATER VAPOR ON LITHIUM (la Réaction de la Vapeur d'Eau sur le Lithium).
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Conference held in Moscow, 1958, 9p.

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SOME ASPECTS OF THE PROBLEM OF STORING FOOD PRODUCTS STERILIZED BY IONIZING RADIATIONS (Quelques Aspects du Problème de l'Emballage des Denrées Alimentaires Stérilisées par les Radiations Ionisantes).
Revue Générale du Froid (France) 1958, 5p.

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Zeitschrift für Physikalische Chemie (West Germany) 1957, v. 10, p. 1-23.

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